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PAPERS

ON HOUSING DESIGN

**MONOGRAPHS ON SITE
AND UNIT PLANNING**



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FOREWORD

The concept of planning, constructing, and sometimes operating housing on a neighborhood or community basis is historically old. Early examples of such community building have not had much influence on the current American program inaugurated about 1933 when the federal government commenced its first peace-time active participation.

This lack of influence may arise from the fact that early examples were not part of a publicly-accepted or publicly-directed program. Frequently, in fact, they were developments sponsored by small groups with special theories of social or political organization. When the utopias of which they were the major physical evidence failed to materialize, the advantages of a large-scale community of homes were lost sight of and frequently the developments were adjudged as impractical as some of the other theories of the sponsoring group. Literature of the current housing movement reflects by such phrases as "utopian," "communistic," or "socialistic" both the influence of early unsuccessful undertakings and the inherent opposition to disturbance by the government of traditional methods of home planning, construction, tenure, or operation. Take, for instance, the following statement by a former housing consultant to two of the nation's leading women's magazines: "The prefabricated house sets a definite limit on the American family. It tends to make the family adjust itself to a modulated enclosure. It 'cans' America. And any canned peoples lose their initiative, their imagination, and sometimes their contact with God."* Nevertheless, housing on a community scale and with a considerable degree of government participation is apparently here to stay and will constitute a dominant element in the whole housing picture from now on.

It is imperative that the nation carry out its vital war housing program without delays for any long-term research. However, the very exigencies of residential construction in a war economy are resulting in significant innovations in both design and materials that are bound to have important post war effects.

There is now enough large-scale, low-cost housing built and occupied in this country to afford an opportunity for a rather thorough evaluation of design. The authors of the four articles presented in this publication have viewed this housing with a perspective based both on actual experience and careful study. The articles cover a wide range of design considerations from closets to climate. It is the hope of the Association that housing officials and architects will find in them a means of improving war housing that must be built immediately and of laying a sound basis for a post war program of great magnitude.

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Edmond H. Hoben
Associate Director, NAHC

September, 1942

* *Savings and Loans*, July 1942, Page 19.



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ARCHITECTURE AND DEFENSE HOUSING¹

by Eero Saarinen,
Department of Architecture and Design
Cranbrook Academy of Art

I am very unaccustomed to speaking -- in fact, I have been quite worried about this occasion and, if the subject Architecture and Defense Housing had not been so interesting to me, I would have found a way to get out of making this speech.

In order to make things easier for myself, I am going to divide the subject up under six headings. First, The Problem; second, The Center Line Project; third, New Kensington; fourth, Experimental Units; fifth, Prefabrication and the Architect; and last, but not least, Research and the Post War Period.

FIRST — THE PROBLEM

Defense housing, with its demand for speed, economy, and large-scale planning and with, at the same time, its obligations toward the post war period, is a real challenge to the architect. The modern architect, I believe, is fitted to take up this challenge. He is conscious of all the problems which this defense housing involves, the immediate problems and also the larger sociological and psychological implications.

All these problems have to be solved together and with the emphasis in the right proportion. No one phase of any of the problems can be stressed more than it deserves. If the architect stresses the practical at the expense of the psychological, the result will be barracks; if he goes the other way and puts too much emphasis on the sociological and psychological aspects of the problem, well, I don't know what would happen. Whatever the result, it doesn't happen very often. I believe that one of the reasons the traditional architect has not been able to grasp the problem of housing in its full scope is that he has not grasped its social and psychological aspects.

You probably wonder here what I have in mind when talking about the psychological aspects of housing architecture. I know all of you will agree with me when I say that any solution of any psychological problem must of necessity--in housing--be the solution of a larger and more important sociological problem. It is a tremendous responsibility to move racially and culturally conglomerate groups of people--200, 500, 1,000 families--even though they may have a fairly equalized

income level, into a predetermined area. The responsibility becomes even greater in the light of all the limitations inherent in a federally-financed housing program--limitations that are now even more obviously at hand through the pressing emergency. A sound and clear understanding of this responsibility, namely, to make these people happy and to give them adequate physical as well as emotional facilities to live with, is now the one great contribution an architect can make.

And it follows that what seemed to be his greatest handicap and limitation may help him to conceive his responsibility in a larger and broader way. The architect should feel encouraged to think in terms of families in relation to the total community. Doing so, he will at least make the attempt to solve one of our great social problems. The problem is to house not only an aggregate of people but also to give them home and the realities and beauties of community life--community life not only based on the force of close neighborhood association but more on the psychology of community participation and community pride. Neglecting all this, the architect would have to be satisfied with functional barracks, which will be a social danger and a social menace, for they inevitably will turn into slums and breeding places of social discontent. The means at the architect's disposal are small but he must try to fulfill these high aims if he wants to remain an architect in the full sense of the word.

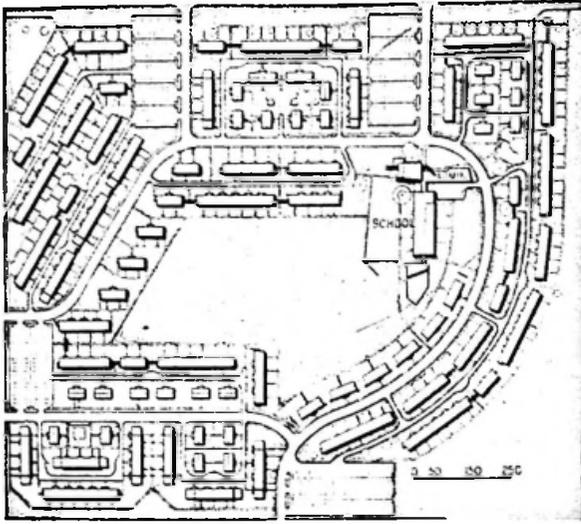
SECOND — THE CENTER LINE PROJECT

I would like to tell you about how my father, Bob Swanson, and I went about designing the defense housing project in Center Line (Michigan), and how within the limitations you know about we tried to achieve something more than just the mere housing of 476 defense workers' families.

We had limitations in cost and time and had to use the standard plans of the United States Housing Authority but we had a certain amount of freedom in the general plan. We tried to use this freedom to achieve a unity and a consciousness of a community grouped around one large green area. We were fortunate in having to build a combination school and community house, which became the focal point for the people. By placing the community house under the only large trees on the property, more prominence was given this building. We achieved a certain amount

1. Speech made at NAHO's Region V Conference in Toledo by Mr. Saarinen on January 22, 1942.

of variety by using both curved and straight drives. The placing of the buildings in relation to the drives, sometimes parallel, sometimes at an angle, gave us an additional variety.



Site plan for the 176 Center Line units. As Mr. Saarinen points out in the following paragraph, this plan was carefully worked out "to achieve a unity and a consciousness of a community grouped around one large green area." (Photograph from the May, 1942 issue of *Architectural Forum*.)

The color scheme is a little more courageous than that usually seen. The periphery of the project is mostly oiled redwood. By the use of pigmented oil stain on redwood, we obtained some quite successful shades of red, green, and yellow, which we used on about half the buildings. These different colors we used to emphasize certain aspects of the plot plan. The color is an integral part of the plot plan and in fact was designed at the same time. At different points where we needed accents, such as at the ends of vistas, a strong blue paint was used. In some cases we stained one side of a building one color, the other side another, and in some we changed color on the middle of an elevation. We never thought in terms of buildings with color, but more in terms of spaces, the boundaries of which were to harmonize.

As the focal point to the whole project we are painting the community house red, with some blues for contrast. As these colors are stronger than any used on the surrounding buildings, they bring the whole color scheme to a climax at the community house.

Thus we tried with the means we had, with color, with curved roads, with buildings of different length and placings, to achieve to a certain degree those qualities which we believe will make a better community.



This view of several of the Center Line units illustrates the happy effect of the curved streets and other features of the community plan noted by Mr. Saarinen in the immediately preceding paragraph. (An FPHA photograph, used in the May, 1942 issue of *Architectural Forum*.)

THIRD — NEW KENSINGTON

I would like to mention one other project because those who planned it faced some entirely different problems than ours and because I believe it to be the best housing project, whether defense or any other type of housing, that has been done so far.

I have in mind the defense housing project in New Kensington (Pennsylvania), by Gropius and Breur of Cambridge (Massachusetts). Some of you may have seen it, most of you are probably familiar with the plan. The site is very difficult but very beautiful. The project is on a slope on the edge of a ravine. The buildings, long, twelve-unit row houses, are placed without any preconceived ideas. They are placed wherever they fit in best with the least amount of grading and still with a good open view.



Model plan of the New Kensington defense housing community, showing the irregular between-building spaces that Mr. Saarinen refers to as particularly attractive features of the plan. (Photograph by the George H. Davis Studio of Boston, used in the October, 1941 issue of *Architectural Forum*.)

There is a very pleasing affect achieved with buildings going away and coming towards you at many different angles. We are so accustomed to our square courts or parallel rows that we do not realize how refreshing angles are. The spaces left between buildings are not those stereotyped courts but graceful multi-shaped spaces which give you a very pleasant variety of endless vistas and views.

The architects were given liberty to make their own unit plans and the plans are here an integral part of the whole scheme. The units are so planned that all the rooms face one way, towards the south and down the slope. The buildings are oiled cedar on the south and a cream colored brick on the north side. I feel that on a site as hilly as this the restraint in color is very successful. The very long building masses are restful on a site where nature was as violent as on this particular site.

If possible, you really all should see this project.

FOURTH—EXPERIMENTAL UNITS

I don't know how many of you are familiar with a very significant development in defense housing, the so-called "experimental units." These units were started by the Federal Works Agency but some of them are now also being built under the USHA. When certain architects, such as Raymond, Kastner, Stubbins, Wurster, and a few more, including ourselves, were given defense housing to do, we were allowed to set aside about twenty-five units to be done later. On these units the architects received more freedom from federal standards than is customary. The minimum room standards and the price limitations had to be met but aside from these restrictions the architects were given a chance to work out their own unit plans or system of construction. One additional requirement of the plan was that the architects were to follow up these experiments with yearly reports for a period of ten years.

Among the most interesting in this group are the experimental units by Kastner and Hibben in Alexandria (Virginia). Their aim was to find a cheaper system of construction, fireproof if possible, which would enable them to give defense workers more housing space than they could normally buy under conventional construction plans. These architects have developed several systems of construction, for example, stabilized earth walls. In this case they stabilized the earth with either bituminous material or with concrete. They are also experimenting with a house built out of precast light weight concrete slabs, where the reinforcement is prestressed—an entirely new engineering con-

cept. The most remarkable thing is that these systems of construction, although still in an experimental stage, are turned out with no more cost than conventional construction.



Some of the experimental "rammed earth" houses put up at Alexandria (Virginia) as described above by Mr. Saarinen. (An FPRA photograph.)

We tackled the problem of experimental units from a different angle. We were interested in trying to analyze how people really live and in what way unit plans should be changed to answer their needs most efficiently. Before doing any designing, we visited every project we could get to, about thirty altogether. We talked with managers and called on the project tenants. We discussed with them their problems--laundry, garbage, cooking, children, husbands--everything.

I do not feel that we have done enough of this direct investigation to draw any definite conclusions but certain facts seem to be significant. No where did we encounter any one who wanted a larger living room, while most of the tenants felt the kitchen was too small. The laundry problem seemed not to be solved, unless the units had a utility room with laundry trays or a central laundry. We found that in the typical USHA, two-story rowhouse, the kitchen entrance has become the principal entrance to the house. We found it was used at least 90 per cent of the time. If this is the case everywhere, the stairway should not be entered on the opposite end of the living room.

On our experimental units we are trying out some new quatrefoil plans and some row house plans. We are using a combination of concrete block party walls and mill construction. In one of our plans we are having the laundry facilities in the bathroom. How all this will work out remains to be seen.

The value in experimentation on units is tremendous--and necessary during time of war when the government is the only client of the building industry and the normal experimentation of private enterprise is eliminated. I think the experimental units also have some other indirect values. They stimulate thought in the whole architectural profession and

have a tendency to keep officials in Washington from becoming too conservative.

FIFTH — PREFABRICATION AND ARCHITECTURE

The prefabricated house industry is going to play a major role in defense housing. It has produced 11,000 units so far and is now being called upon to produce 42,000 more. This industry will also play an important part in the post war period and will probably revolutionize building methods.

No matter how temporary these buildings will be (and it is very likely that they will not be so very temporary), there is as equally a great social obligation involved as in other types of housing. The immediate problem is to have projects of demountable houses as well planned as possible with the very simple means at hand. The best architectural talent in the country should be asked to participate here. But more than just this careful physical planning should be done. This industry should work together continuously with architects and sociologists toward improving the designs of their units. The typical demountable house today is designed like a little romantic package that would look best with miles of Cape Cod seashore around it. The problem of designing a standardized house to be part of a community is quite different. Even if such designs cannot be put into production now (because of the delays they would cause in output), the research and planning for future models should begin now, just as the automobile industry has their research and design departments continuously working on models to be produced three or four years hence.

RESEARCH AND THE POST WAR PERIOD

One obligation that falls on all of us is the research and experimentation necessary for development of the housing program. As I pointed out earlier, private enterprise cannot be depended upon during the war to do the experimentation which is a normal part of the building industry. It is, therefore, necessary that we--the housing agencies in

Washington, local housing officials, and the architectural profession--work out a definite program whereby research and experimentation can go on. I visualize a central research bureau separate from the housing agencies, manned with energetic experts in their different fields. This bureau would handle problems which are national in scope. There would also be coordinated with the central office, regional research bureaus, possibly connected with universities. These regional bureaus would work very closely with NAHO and other groups such as labor unions and social agencies. Individual architects would be called on to contribute research on specific problems. These bureaus should evaluate everything that has been done from every angle and should work out new standards and new methods of building. These standards and methods should be tested in experimental units. Some such units should be for defense housing and others should be expressly for post war housing.

I feel certain that tremendous advances can be made with housing in the post-war period and I feel sure that the standards of living that may have to be comprised for the duration can be doubly regained, provided that we face the problems involved now.

In conclusion I want to mention a few points which I feel we as individuals should insist upon. We should insist that defense housing, in spite of the speed and economy with which it must now be built, should be treated as housing and not as barracks. We should insist upon well designed demountable housing, first as to general layout and colors but later we should insist upon well designed buildings. We should also insist upon a careful selection of architects. They should be chosen because of their professional ability and because of their interest in and understanding of the whole housing movement. And, lastly, we should insist on a continuous and organized research into all the problems of defense and post war housing.



HOUSING FROM THE TENANT'S VIEWPOINT

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... Or, how has housing passed the test of actual use by low-income families? That was the subject of a two-year study by ELISABETH COIT, AIA, on an Edward Langley Scholarship award. She subjected to scrutiny some six score housing projects, and any number of published and unpublished reports, always checking the planning theory against the actual living habits and desires of the occupants. Her voluminous report, already abstracted in text form in the "Octagon," is here done graphically, to summarize as quickly as possible the principal points in her conclusions.

THERE ARE MANY SURPRISES in store for one who would learn how the tenant views a low-rent housing project. And some of them would be humbling surprises. The low-income family has been much less articulate about its needs and desires than the planning theorists and social workers, but it can speak pretty positively after a few months of actual occupancy. And for all the inconsistencies, its reactions contain something both incontrovertible and illuminating.

So Miss Coit, architect and housing consultant, spent two years scrutinizing housing from the strictly practical side. Her study has a very timely element. Housing low-income families is definitely established as big business. And the years that have elapsed since Government began to dot the urban scene with large-scale multiple-family buildings have given time for the testing of earlier theories of sponsors and designers.

"I have tried," writes Miss Coit, "to learn what the low-income client thinks he needs or would like to have, and what architects and other experts in the more architectural aspects of home-making think he ought to have, or can have, and how this or that solution works out in practice; collating and comparing, rather than criticizing, the opinions expressed, but keeping in mind always the necessity of reconciling as far as possible expressed desires with the present-day procedure as to cost, design, construction."

The results are here reduced to a largely graphic report. With no intention of making another addition to the mass of housing theory, the report does contain several graphic planning suggestions that came naturally out of complaints frequently voiced by tenants. Plans are shown that did not work out well, along with some that did. Then, drawn in plan and elevation, there are some common-sense but perhaps somewhat radical ideas for making limited space more effective for the low-income family.

A BUILDING TYPES STUDY



Floor plans in this section are reproduced at 1/8 inch, unless another scale is shown

WHERE TENANTS AND TENETS DON'T AGREE

MORE IN SORROW than in anger, one housing project manager remarks, "They use their kitchen for things they ought to use their living room for." And thus he voices, in one sentence, the difficulties forever hounding the planner of low-cost housing. What rooms were designed for and what they are actually used for are frequently quite different things. Thus does the nicest theory fall before the fact.

If cost were no object, a great many of the complaints uncovered in Miss Coit's study could probably be obviated simply by making rooms both plentiful and large. And to a certain extent many of the tenants' complaints do come down to the simple matter of more area. But, costs being inexorable, the problem remains one of designing the various areas for maximum utility to the families who are actually to occupy the units, not for some theoretical and more tractable family which the architect might like to visualize.

Principal complaints of tenants deal with congestion in two areas in the apartment: the living room and the kitchen. There is "too much living in the living room." Homework suffers. The breadwinner becomes inefficient for want of rest at home. Or, as tenants phrase it: "Too close companionship when we are in one room." "No place for children to play without bothering their father who wants to rest." "The radio disturbs study." "We have no playroom, no workshop."

As for the living room, there is also the fact that few low-income families can take the time and trouble to use the living room for its intended purposes. "The congestion then occurs in the kitchen," writes Miss Coit, "where there is even greater discomfort, as well as a certain stigma attaching to having only one room for washing, cooking, eating, dishwashing, drying steaming linen, ironing, bathing the baby, changing him, handling his daily quota of diapers, homework, recreation, and the informal entertaining which is all the lower-income family can ordinarily manage. Homework is done there because there light has to be maintained, and because in the poorest home that is the warmest room in winter, says one large group reporting. And over 80 per cent in the same group eat meals there, not only

because it is too much trouble to serve meals in the living room, but also because one room must be kept neat, and not 'mussed up' two or three times a day. The farm family naturally eats in the kitchen; but tries to keep washing and other major operations out of it, although ironing is approved because it is a clean job. Preparation of food, eating and clearing away make some nine fixed items on the day's schedule for that room; and laundry work alone is endless. It is not done once a week, but three or four times a week, or daily. Few, if any, working-class families can pile up a week's supply of dresses, play frocks and suits, mechanics' overalls, etc., to say nothing of underwear."

"On the other hand there are great unused spaces, which must be paid for by some one, whether entirely by personally earned wage or salary, or with the aid of public subsidy. The living room is idle most of the day, as is the bathroom. Bedrooms are used only for one-third to one-half of the less productive hours of the 24, for sleeping and for the storage of beds, bureaus, a chair or two, and thus equipped, useless for any other purpose.

"The teen-age girl, meanwhile, longs for some practicable low-cost version of the Hollywood boudoir; often all she is looking for is a quiet place for her homework. Equally the boy, of whatever class or income bracket, needs some place for his own

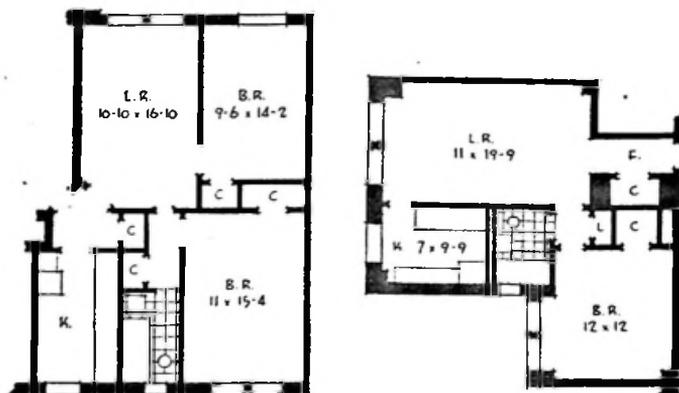
affairs and room for discussing them with his peers—who are ordinarily not his parents and sisters. Fathers, too, have hobbies, and, like other people, sometimes need quiet and solitude.

"A new nomenclature, combined with changes in plan and detail neither radical nor costly, would restore to use these areas, increasing the efficiency of the shelter, and at the same time embellishing the small-scale family scene." Miss Coit delineates some suggestions along this line on page 83.

Insufficient closet space is another frequent complaint. The low-income family may not worship beauty, or at least may not expect to indulge its worship, but it does demand convenience and order.

"Do we," asked a speaker at a housing conference, "need closets in these dwellings? I am not at all sure of their relation to health and delinquency. . . Every family has a right to. . . the essentials of decent, happy living, but we can't afford to give any extras." "And the affirmative to this question," says Miss Coit, "is undoubtedly the most unanimous demand in housing today. Broom closets, wrap closets, in the hall and near the back door, cool storage closets, bedroom closets, toy closets. . . are demanded almost vociferously by a people still rather inarticulate as regards most of its housing needs."

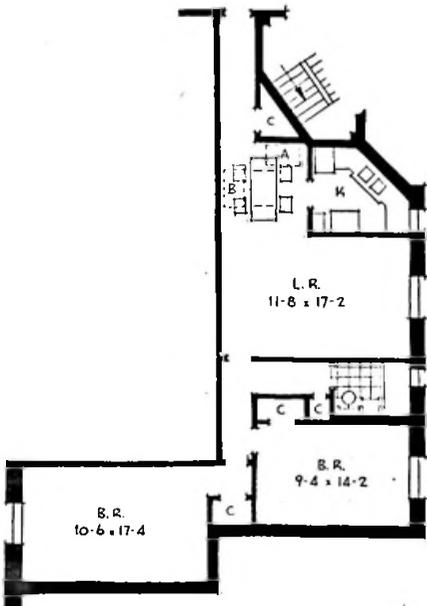
And again, "convenience, labor saving, possibility of ease and rest in a



While the living rooms of these two units (they are actual plans in two large New York apartment developments) might be considered to fulfill the normal requirements of living rooms, they fail to provide any of the tenants' requirements as listed above. In both cases entrance to other rooms is through the living room, making it difficult to keep it neat. There is no possibility of privacy for sleeping in the living room. All dining must be accommodated in these rooms since neither kitchen has dining space

strenuous domestic life seem to dominate tenant requests."

There is little room here for generalities about what they do want, but a few might serve to explain some seemingly odd reactions of tenants. "Especially striking is the record of how little apparently some of the not so very poorly housed, as well as the slum dweller, care about modern housing and about the major comforts, conveniences, and safeguards considered their right by safety, hygiene and other welfare organizations, while valuing highly a feeling of freedom, of independence, and of opportunity for self-expression. . . Some families will not bridge the distance between the new development and the old neighborhood where friends live. . . Possibly one explanation is that of the London County tenant who disliked the social 'coldness' of the new neighborhood, and moved back to the slum where friends lived. Possibly a soft drink parlor and beer garden, in addition to adult education facilities, would prove a help to both tenant and manager, more especially in projects housing many tenants who do domestic work, for most of whom physical weariness and lack of prospect of any social or economic advantage combine to make organized evening education rather pointless."



The combination foyer and dining alcove so often seen does not work out well in use. When the dining table (stored at A or B) is set out for use by four persons, it effectively blocks the passage. And the space is poorly lighted and ventilated

ROOMS AS TENANTS USE THEM

Where the strenuous activities of family life must be compacted into a few not-too-large rooms, "normal" room uses get sadly confused. Under such circumstances, the tenant's most urgent desires as to room types might be summarized thus:

Living Rooms, little used as such by low-income families, are best designed if they serve these purposes:

1. Reception room, kept neat for callers.
2. Bedroom, (a) frequently as regular sleeping place for child or adult; (b) occasionally for a child with illness or "symptoms."
3. Occasionally as dining room, but not as the only dining space.

Dining Space, whatever its location, should fulfill three requirements:

1. Convenient place for frequent "staggered" meals.
2. Space for whole family and guests.
3. Light and ventilation.

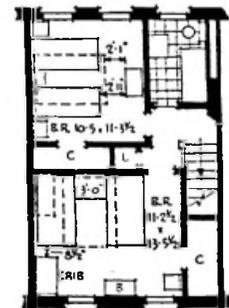
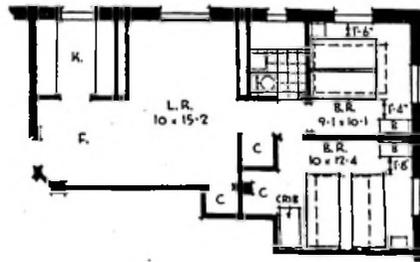
Bedrooms, too often suitable only for sleeping, would be more effective if also useful for:

1. Quiet space for homework or hobbies, for both adults and children.
2. Secondary living room space where club-age boys or girls can discuss their own affairs with their own friends.

Bathrooms are often called upon to relieve the over-used kitchen, particularly for laundry work, and might well be arranged and equipped for light laundering.

Kitchens, usually the busiest room by far in the whole dwelling, are called upon to accommodate several functions besides that for which they were designed:

1. Some of the bathroom uses overflow into the kitchen; babies and small children are often bathed in the laundry tray, as the bathtub is too low.
2. Even the "laboratory" type of kitchen has to be the small child's play space, and the family assembles where the mother is working.
3. Kitchen is used for snacks, homework, sewing, mending, etc., and for many small tasks done while the stove is watched.



Chatham Village, Pittsburgh, Pa.
Ingham & Boyd, architects

So many bedrooms, while adequate for the strictly essential furniture, leave no space for other activities. While obviously the answer is not simply a matter of additional area, these bedrooms become simply "passage-plus-furniture" rooms

Illustrating the increased usefulness of bedrooms just a little bit larger. Here the same furniture is accommodated, plus a few pieces more, but the added space still leaves room for some daytime activities, such as home study or children's games

STANDARDS FOR ROOM SIZES

MUCH VARIATION in size and shape of room is shown not only in existing housing surveyed, but also in recommendations of Government authorities and other experts.

A survey of lower- and low-rent developments made by the Housing Study Guild shows the effect of adequate size on rentability: the apartment with an average net room area of

168 sq. ft. proved satisfactory, while that with a net room average of 113 sq. ft. was "very difficult to rent, the bedrooms especially proving too small." USHA minimum areas of 1938 for 3-bedroom units (Figure 1) would give averages of the kind very difficult to rent to lower-income families in New York even in depression years. The National Association of Housing

Officials at about the same time advised similar minimum areas. Naturally they do not recommend that minimum dimensions obtain throughout. Neither does USHA, but its "unit plans" show average room areas of 114 sq. ft.

The 1939 revision of USHA recommended areas increases the sizes of second and third bedrooms and suggests more generous areas all along the line. Nevertheless, the recommendations would give little space beyond that necessary for circulation around the usual furniture. It is therefore a

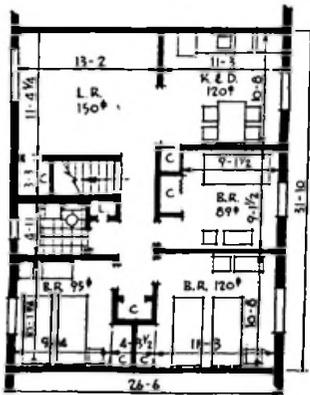


Figure 1. A graphic presentation of room size standards given by USHA in 1938. They call for: Living room 150 sq. ft.; kitchen 60; dining alcove 60; or an aggregate net of not less than 260 for those three; first bedroom 120; secondary bedrooms 100 for two persons, 65 for one.

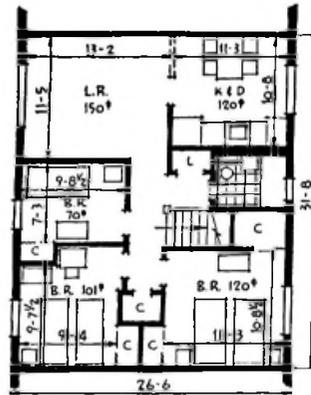


Figure 2. Minimum recommendations of USHA check list of 1939: Living room 150 sq. ft.; kitchen 70, with aggregate of these and dining space of not less than 260; first bedroom 120; secondary bedrooms 100 for two persons, 65 for one. And 20 sq. ft. of storage space

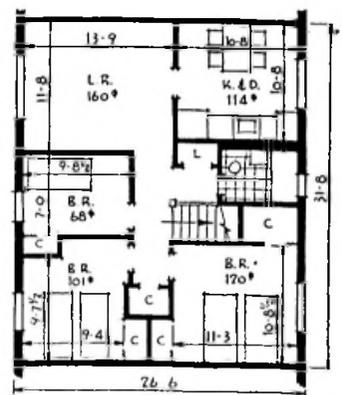


Figure 3. Minimums by USHA for Lanham Act projects (1941): Living room 160 sq. ft.; kitchen 70, with 270 for living-dining-kitchen area; first bedroom 120; secondary bedroom 100 for two people, 65 for one. And they ask 30 sq. ft. of general storage space

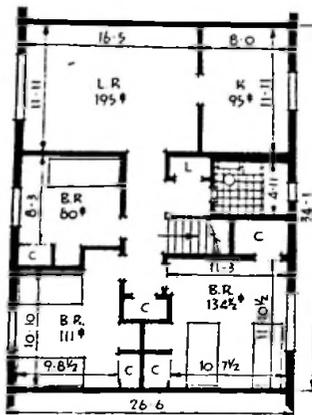


Figure 4. Maximums by USHA for Lanham Act projects: Living room 210 sq. ft.; kitchens 120, with aggregate of 290 for the two areas, first bedroom 130; 110 for two-person secondary bedroom, for one person 80

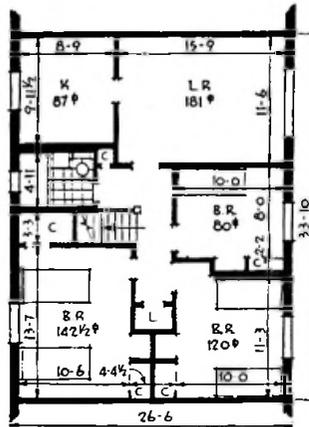


Figure 5. The New York State Board of Housing recommended (1938) simple 180 sq. ft. for living rooms, bedrooms 140, kitchens 70, using "reasonable flexibility" in application. The present regime recommends bedrooms of 120 sq. ft. for two persons, 80 for one

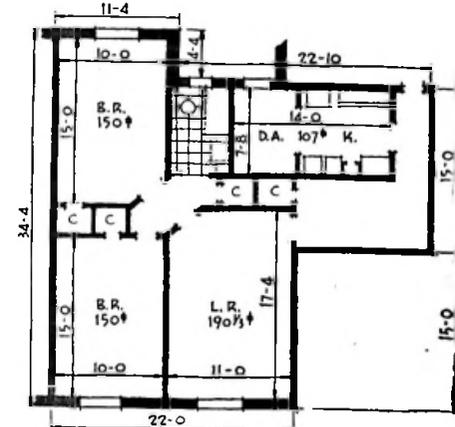


Figure 6. From the tenant's standpoint this plan of Academy Housing Corporation shows very desirable areas. It happens to check quite closely the averages of 14 projects in New York City built "for workers by workers," and is more generous than any "standards"

Springsteen & Goldhammer, architects

matter of congratulation that, as the list points out, "there will be cases . . . where the exigencies of the plan impose a greater aggregate area."

In recommending larger room areas, (asking gross areas averaging 237 sq. ft. per room) the Women's City Club of New York explains in its report, "While it may not now be possible to build such apartments for the lowest-income groups . . . the additional area makes for housing which is good and not really extravagant. Such apartments should withstand obsolescence, even if new methods of construction enable us a few years hence to build more cheaply."

An unpublished survey of 23 New York workers' and small "white collar" projects, built from 1904 to 1933, including prosperous and depression years, shows gross apartment areas as 253, 235, 233, 229 sq. ft. and down, while net areas per room in sq. ft. run 182, 171, 169, 165, and down, with an average of 133.7. Eliminating a few non-typical ones of the group, however, gives averages of 190 for the gross and 142.9 for the net.

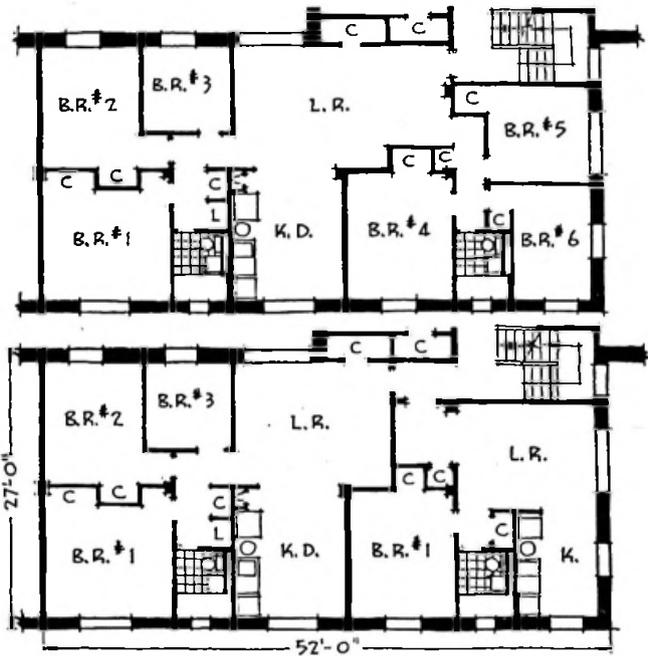
"Similar areas," concludes Miss Coit, "are found in the 14 projects built in the same city under the state housing law of 1926. Average living room areas are here shown (Figure 6) to be 192.8 sq. ft. and average bedrooms 145.7. The averages of the projects in this group are significant because many of them were built for workers by workers, some in the boom years, some in depression times."

FOR THE NON-TYPICAL FAMILY

NON-TYPICAL LAYOUTS are much appreciated in housing projects, for the unattached and the non-typical family group, if for no other reason than to prevent a development from becoming "a too purely parent-and-child community."

Even the typical family has changing housing requirements as it progresses from married couple to family group to aged couple whose children have left the home.

From the standpoint of management, too, the non-typical groups ease certain problems—they use play areas and community facilities at hours different from those of mothers and children. Again, they don't need the sunnier exposures, the minimum of stairs to climb; they can use units that "normal" tenants would not like.



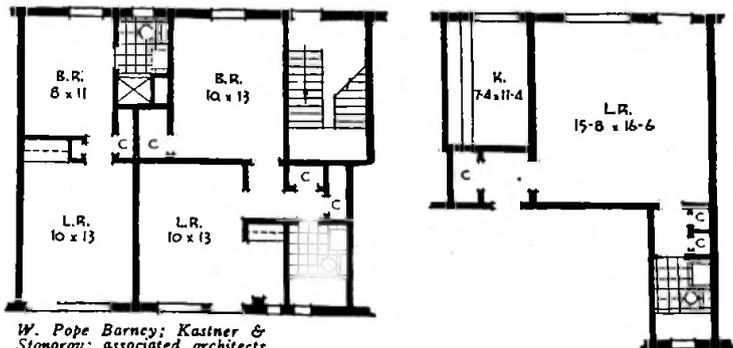
Harry G. Lindsay, architect

Combining two apartments was necessary to provide for big families in Yellow Mill Village, Bridgeport, Conn. A three- and a five-room apartment (upper plan) became an eight-room unit. Considered to be the first public housing to provide for a family of 12 children, this project can quickly and inexpensively reconvert the space



Cameron Clark, architect for alteration

Because its rooms were generously proportioned when it was originally built, back in 1877, the Tower and Homes development in Brooklyn has had a long and useful life. While it lacked modern layouts and equipment, it was possible to modernize it after half a century

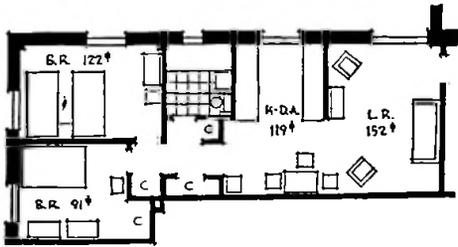


W. Pope Barney; Kastner & Stonorov; associated architects

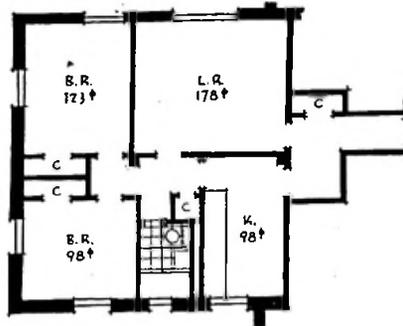
Clarence Stein, architect

For the very small family or for individuals the Hillside project (New York City) offers tiny ground-floor units (right) and the Carl Mackley development (Philadelphia) provides ground-floor two-room units. With entrances from outdoors, not from the hall, these units give privacy for old people or others who need quiet

WHAT TENANTS WANT IN THE LIVING ROOM

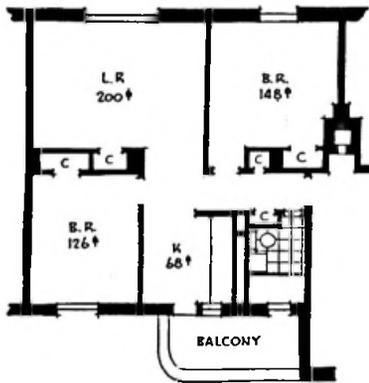


Here is a prime example of a living room that suffers from circulation difficulties. The only possible circulation is through the center of the room. Low-income tenants would also complain that it has no privacy for use as a bedroom.

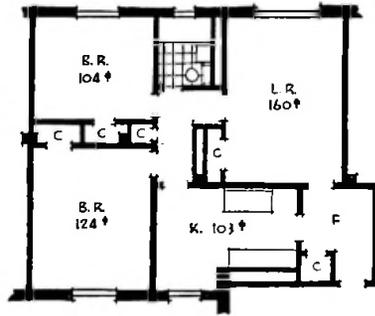


Julia C. Lathrop Homes, Chicago. Robert S. De Golyer and associated architects

Ideal from the tenant's viewpoint is this living room in a large Chicago low-rent building. There is an alternate route from entrance to bedrooms; the living room offers quiet or sleeping privacy, and is nicely removed from the kitchen.

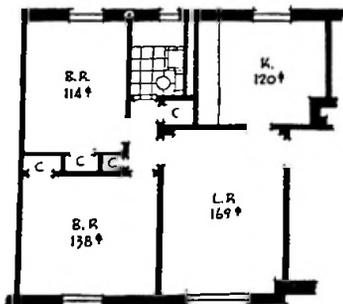


This living room fulfills most of the oft-voiced requirements, except that the omission of a little partitioning and a door spoil the privacy part, and leave the living room too directly open into the kitchen workshop.

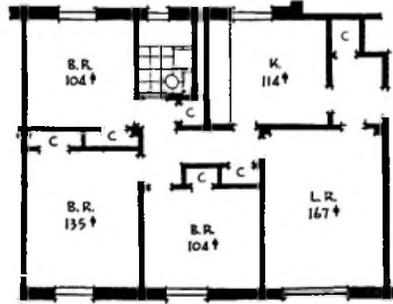


Harlem River Houses, New York. Archibald Manning Brown and associated architects

Here is another living room that serves well the functions most wanted by the low-income tenant. It could serve as spare bedroom complete with closet; it need not be a hallway; and it can be shut off and "kept neat" for guests.



A further example of a living room that must handle too much traffic; in this case virtually all of the circulation is directly through this room. Lively teen-age offspring would soon drive a weary father either to bed or to the corner saloon.



New Towne Court, Cambridge. Henry C. Robbins and associated architects

A much pleasanter living room all around is this one. Father can read his paper undisturbed, by insisting that the youngsters go through the kitchen. And the room can be completely isolated. It has good size, too, and good wall spaces.

IF, as Miss Coit's study indicates, there is "too much living in the living room," what does that mean? It means, at least for the lower-income family, that apartments are designed to leave too many functions for this central room, too few for other rooms. What it amounts to is that the less fortunate family has little time or means for using a living room for its rightful purposes, but at the same time it lives too strenuously and too compactly to crowd its family life into the living room.

Does that mean, then, still larger living rooms, to accommodate other functions? Rather the other way around, it appears to Miss Coit. Be sure the living room fulfills the demands that will really be made on it, but decentralize the family activities in other rooms of the apartment.

"Allowing as much space as possible for the bedrooms, and that somewhat at the expense of the living room area, might better serve a great variety of families especially as the progressively shorter working week and seasonal unemployment are gradually more and more compensated for by intensive recreation and adult education activities requiring some isolation and a little space for use without interruption. The living room, nowadays no longer used as a rule for weddings or funerals, and only occasionally for a formal meal, if treated frankly for what it is, namely a sleeping room and a reception room, can have more, rather than less, charm than has the present wasteful, often little-used omnibus living room. And that would apply particularly to the many recent dwellings in which the living room is merely a kind of lounge extension of the passage from the public hall to bedrooms and bath, with no lights except tenant-supplied lamps."

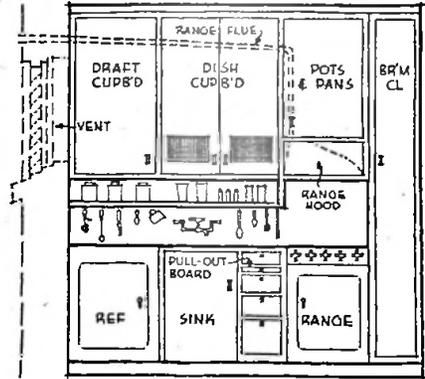
What tenants particularly ask of living rooms are:

1. That circulation space not interfere with living space.
2. That privacy be possible for bedroom use, perhaps during an illness, or just for quiet. In many urban low-cost housing developments it is assumed that the living room doubles as a bedroom.
3. That it be separated from kitchen work space.

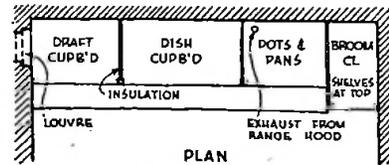
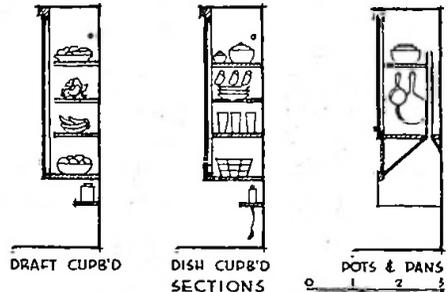
IN THE KITCHEN

MOST OVERLOADED of all the areas in the low-income family's dwelling is the "kitchen," so much so that even the nomenclature is misleading. Miss Coit suggests the term "meal center" as being more descriptive of its true functions. And she has here delineated (below) in plan and elevation what might be taken to represent the ideal meal center; this, for the single-family house, should indeed simplify life for the housewife. It satisfies four tenant requirements most often demanded: more counter shelf space, more storage space, eating space not in living room but out of sight of work area (it is separated from it by head-high cupboards), and usefulness of dining space for other purposes. The work functions are arranged in sequence, according to scientific kitchen planning. There is about two and a half times the usual dresser space below 69 inches from the floor, with corresponding increase in work surface. The "draft closet" may look like the old fashioned pantry, but it is really important to the low-income family—allowing for quantity purchases, for much home canning, and for economy in refrigeration. The back porch entry would be highly prized, for comfort, for summer meals; and the hanging space for wet outer garments would be appreciated. There is no provision for laundering. That, says Miss Coit, is better taken care of in a utility room or basement, in the one-family house, or in the apartments day-to-day washing can be done in a "bath-utility" room (see page 78) or in the communal laundry. Whereas 36 in. is normal height for work surfaces, the wheel table is 32 in., giving a good height for beating and mixing, besides providing useful extra work space where needed. The dining space, not fully separated from kitchen area, would prove useful at non-meal-times, for play space or for hobbies.

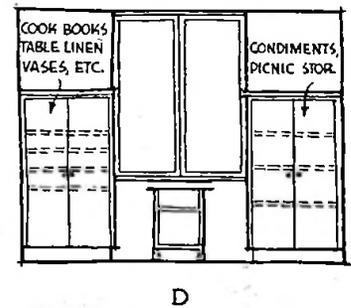
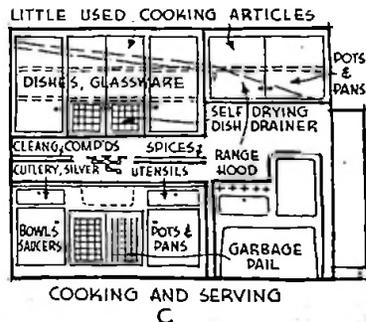
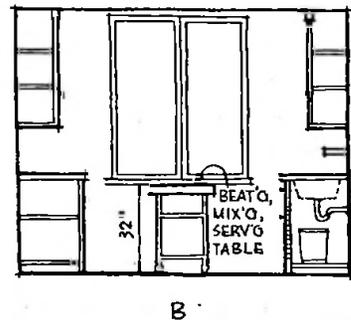
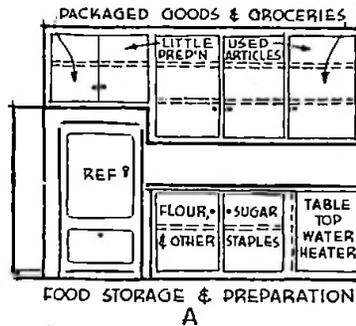
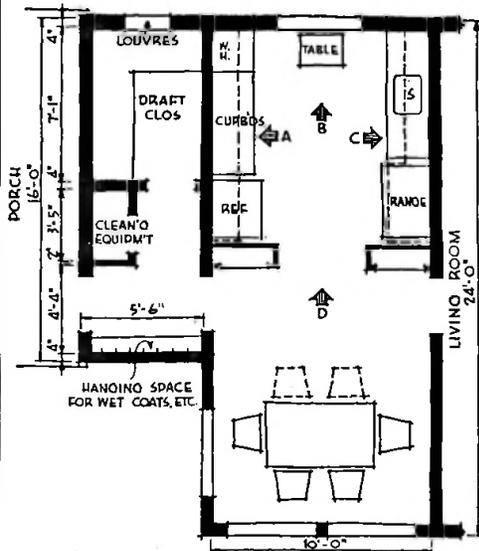
For the crowded apartment the elevations (upper right) show a compact one-wall kitchen. Special features which Miss Coit has given it include: draft cupboard vented through louvres to outside to save refrigeration, range hood and flue, ventilated dish-drying cupboard so dishes may be put out of sight, and a shelf for the most used kitchen gadgets.



ELEVATION



A ONE-WALL APARTMENT KITCHEN



IDEAL "MEAL CENTER" FOR A ONE-FAMILY HOUSE

BATHROOMS AND THEIR EQUIPMENT

COMPLAINTS about bathroom layout are many and varied, but in general they are the same complaints that almost any family could register against the typical small bath: never enough storage space, can't open the window without standing in the tub, poor regulation of the shower flow, inconvenient placing of soap trays, towel racks, etc., no locked medicine cabinet, and so on.

A particular trouble in cramped quarters of a public housing project is that tenants must often use the bathroom for additional functions, such as light laundering. Miss Coit suggests a "bath-utility" room (right) which by the simple addition of a single laundry tray and an overhead drying rack, will serve as a combination bathroom and laundry room.



A common error in planning is to put medicine cabinets back to back in a party partition, with no insulation between them. "Insulation between the back-to-back medicine cabinets . . . would not only cut off much of the neighbor's plumbing noise, but would also render his conversation inaudible—and designers of hotels, clubs, and expensive apartments may one day become aware of that simple device and adopt it"

CHECK LIST OF ESSENTIAL BATHROOM EQUIPMENT

The storage problem in the bathroom is one that seems to plague every housewife, whether in the one-family house or in the crowded apartment. Here is Miss Coit's check list of essential items for which space must be provided in every bathroom, for a family assumed to include four people:

In Convenient Locations

- | | |
|---------------------------|--------------------------------|
| 4 wash cloths | nail brush |
| 4 hand towels | shoe buffer |
| 4 bath towels | clothes brush |
| hooks for 2 bath robes | w. c. brush |
| 2 bathing caps (at least) | bath brush or cloth |
| 4 tooth brushes | soiled-clothes hamper |
| | and perhaps a weighing machine |

In Mirror Cabinet

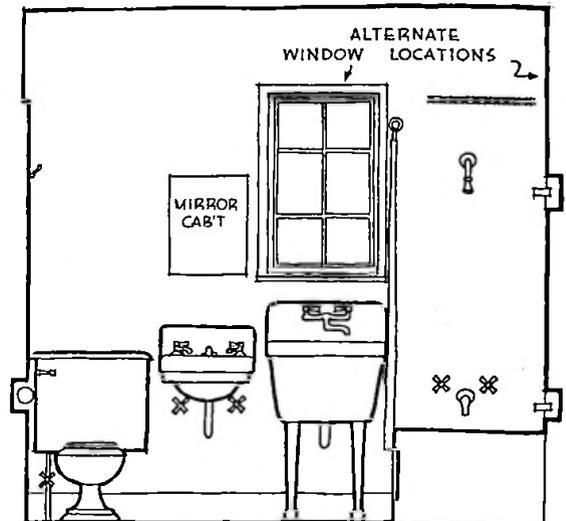
- cosmetics, including nail buffer, etc.
- shaving equipment
- tooth paste
- mouth washes

Stored Out of Sight

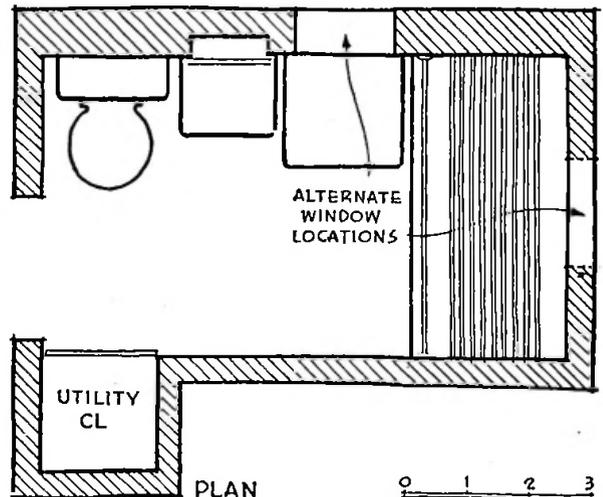
- | | |
|---------------------------------------------------|---------------------------------------------------|
| hot water bottle | shoe polishes and cloths |
| enema equipment | cleaning and wiping |
| extra toilet paper | cloths |
| extra soaps | facial tissues |
| extra towels | cleaning compounds |
| household remedies, including sodium bicarbonate, | mineral oil, mild medicines, liniments, bandages, |
| gauze, Red Cross kit, etc. | |

In Locked Cabinet

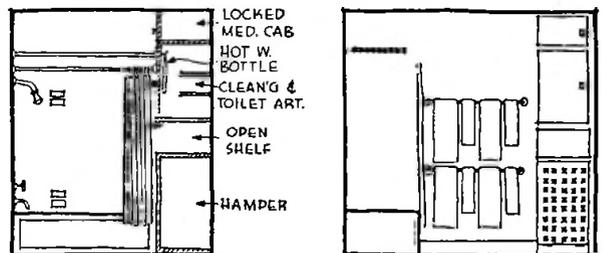
- strong medicines and poisons
- In the typical bathroom there should also be space for drying stockings or light underwear.



ELEVATION



PLAN



ELEVATION

ELEVATION

Plan and elevation for a "bath-utility" room that should solve many problems for the low-income family, delineated by Miss Coit. A single laundry tray provides a place for doing the light but continual washing of stockings, underwear, children's things, and so on, which the harassed mother must do almost daily. And, as Miss Coit points out, a laundry tray is a fine place for bathing baby. "Apart from the advantage of eliminating from the kitchen the discomforts of steam, dripping clothes and a wet floor . . . such an arrangement would enable the washing to be done at a pace suited to the washer, without interrupting processes at awkward times to fit the meal schedule"

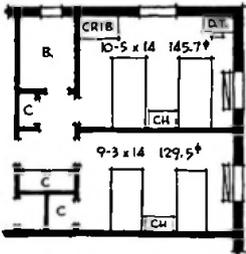
BEDROOM UTILITY CAN BE INCREASED

GREATEST TROUBLE found with bedrooms is that they are commonly just rooms for sleeping and for storing beds and chests—they have little or no daytime utility. With the usual furniture, most bedrooms leave room only for passage, not for play or homework or even sewing. Larger rooms would help, of course, but increased area is not the only answer. Often it is a matter of choice of furniture and its placement. Biggest requirement, says Miss Coit, is a new conception of the purpose of bedrooms. She suggests a new nomenclature, such as: "parents' room," "children's room," etc.

Thinking in these terms, designers would probably use more built-ins. "A girl's room, or a boy's room. . . could contain one or two cots or bunks. But instead of the tenant-supplied bureau, expensive to buy, especially on the instalment plan, soon dated and sooner shabby, a simple set of shelves and a few inexpensive trays built into a closet to store clothing."



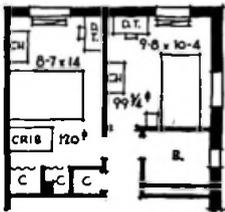
Photos by Eric J. Baker



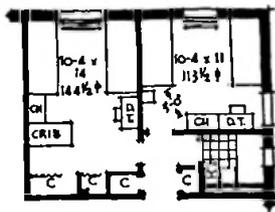
Here are two fairly large bedrooms, with suggested furniture arrangement to meet certain standards—twin beds 3 ft. apart as A.P.H.A. recommends, and larger bedroom to accommodate a crib. To save space the chest is put between beds, but still it is "passage-plus-furniture"



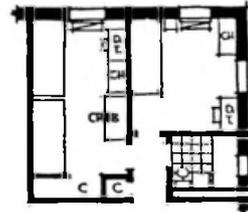
Built-in furniture has greatly improved the usefulness of both of these bedrooms, in a house planned by the John B. Pierce Foundation and Skidmore, Owings & Merrill, architects. The boy's room is really a small bedroom, but the built-in bunks and shelf spaces leave good room for study or hobbies or just conversation



An actual and fairly representative plan of two bedrooms, with the furniture arrangement suggested by the architect. Note 1 ft. 9 in. between bed and wall in the larger room. In neither room would there be space or equipment for any daytime activity, or for homework



The plan at the left is here redrawn to show how much area would need to be increased for reasonable passage between furniture and to allow 3 ft. at least between beds and crib. (Assuming twin beds 3 ft. by 6 ft. 10 in., and junior beds 2 ft. 9 in. by 6 ft.)



Here the same plan (far left) is again redrawn, this time to same size but with different furniture arrangement. There are built-in beds in principal bedroom, built-in bunks in the other. Linen is stored in drawers under beds and under lower bunk. Usable space is increased

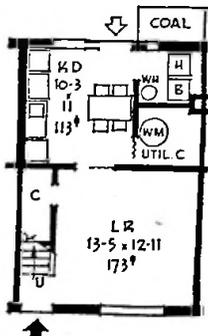
THEY ALL WANT MORE STORAGE SPACE

BROOM CLOSETS, wrap closets, in the hall and near the back door, cool storage closets, kitchen closets near the stove and near the work surfaces, linen closets, bedroom closets, toy closets . . . "are demanded almost vociferously by a people still rather inarticulate as regards its housing needs."

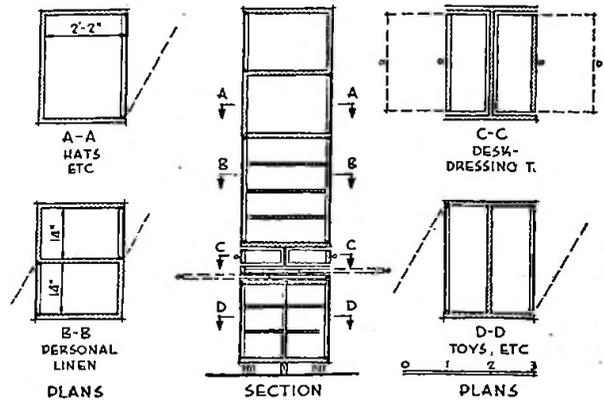
"And when the layman rests the expert takes up the tale. The National Safety Research Institute points out the frequency of serious falls caused by keeping household equipment on the cellar stairs for lack of closet space, of falls by people climbing on flimsy furniture because they have no closet in which to keep a step ladder, of children's falls when climbing to a high shelf for toys which ought to be kept in a low toy closet. . . Not to mention one of the most successful manufacturers of prefabricated houses who . . . brackets together 'closets and a knowledge of the amount due monthly on the house' as forming the foundation of 'that order and security which are at the base of a successful home.'"

"Convenience, labor saving, possibility of ease and rest in a strenuous domestic life seem to dominate tenant requests. . . And convenience seems to be arrived at by the relatively simple recipe calling for adequate work and storage spaces. . ."

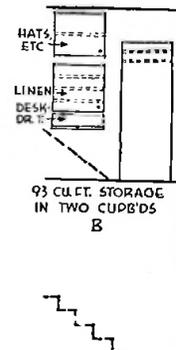
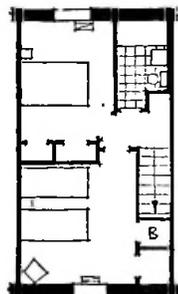
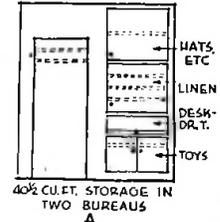
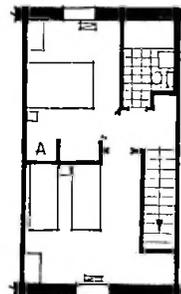
For the one-family house the utility closet is coming into wide use. "One serves in the atticless, cellarless house as storage place for articles which cannot find a place in closets. USHA recommends in the row house a 'utility room and a small laundry with each unit: this is a vestibule, storage room, laundry and pantry combined,' and this recommendation tends to speed its more general adoption."



A USHA plan suggestion showing the now-popular "utility" closet, which besides providing a much-needed space for the washing machine, will also accommodate a great variety of wheel toys and household equipment. It is separate from heater room



A favorite idea of Miss Coit's is this space-saving storage unit for bedrooms, combining bureau, desk and cupboards in one built-in closet. It has pull-out leaves for desk or dressing table use and drawers and cabinets for toys, clothes, linen, hats, etc. While it could be made for a single bedroom, this particular unit is designed for adjoining rooms, half of it facing one room, half the other. The space can be divided in any desired way (see sections)



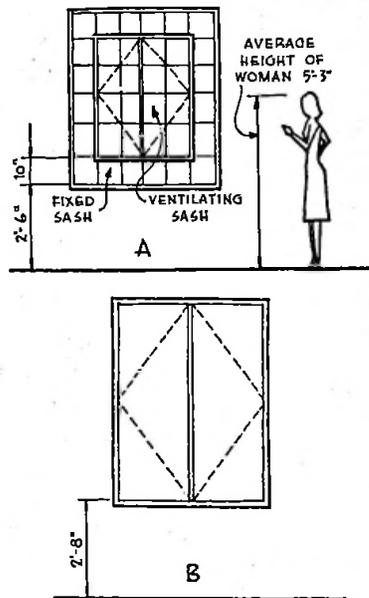
Here is Miss Coit's desk-bureau-closet combination as it would add storage space to an actual plan. The space at "A" in the upper plan would ordinarily be used for a dresser or chest, but could have almost three times the storage space with the built-in combination, as in the section (upper right). The space at "B" in the lower plan is almost just waste space, but the combination closet (section, right), makes the space very useful

PLANNING DETAILS DESERVE ATTENTION

HOUSING PROJECT MANAGERS and tenants can offer many practical design suggestions on details of finish and equipment. While they don't always agree, many of their remarks come up often enough to deserve attention.

Windows and window heights are of especial importance in the livability of a room. "Current practice . . . for window sills at least 30 in. above the floor has several advantages. It avoids glare, it keeps children and toys on the right side of the barrier, and, provided one is fairly close to the window, permits a person in a sitting position to supervise the children's play and enjoy the passing scene. . . The 30-in. sill height has the distinct disadvantage, however, of giving less air movement, and thus less comfort during hot weather, especially where humidity is high, than does a lower sill. The lack of air circulation is sometimes painfully noticeable when the entire body is below the sill level, as in the case of a person lying in a bed."

"Regarding air and light, for which architects are at pains to secure the best orientation possible, it is sometimes difficult to gauge the tenant-consumer viewpoint. . . Blazing sunlight, a southern exposure and drawn shades, wherever found, are easily understood. But just how does the 'white-collar' family in a small apartment use a suite with rooms facing north or south or east or west . . . when most windows—especially living room windows—have a sash curtain covering one-half of the glass area, a drape covering about three-quarters, a shade drawn half way, and perhaps a screen?"



The type of casement window found in a number of housing projects (above) gives little air circulation for children or seated adults, or for anybody lying in bed. A sill height of 2 ft. 8 in. is recommended for safety (ARCHITECTURAL RECORD May, 1941, p. 79), but if the actual sash opening starts at that height air circulation is much improved. In the sash (above) there are 288 corners to wash (outside and inside); the sash in the lower sketch has but 16

The widespread use in housing projects of living rooms for sleeping suggests a wider use of built-in or dual-purpose furniture (ARCHITECTURAL RECORD August, 1941, p. 68). Where beds are used as couches in daytime, the combination end table and chest (lower left) provides useful storage space. Two views at right show daytime and night use of a combination couch-bed

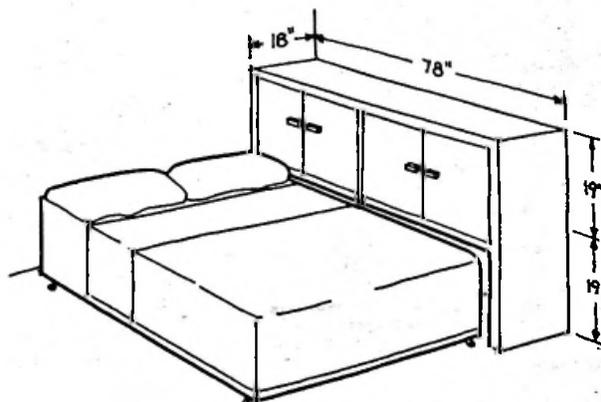
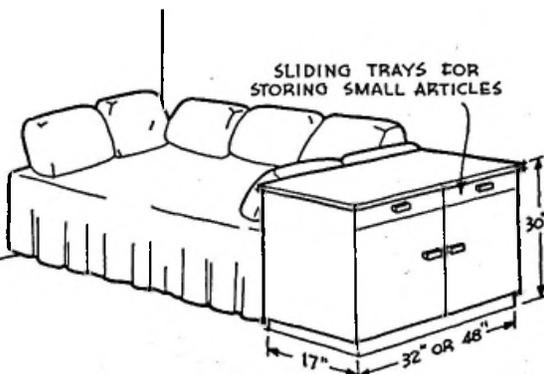
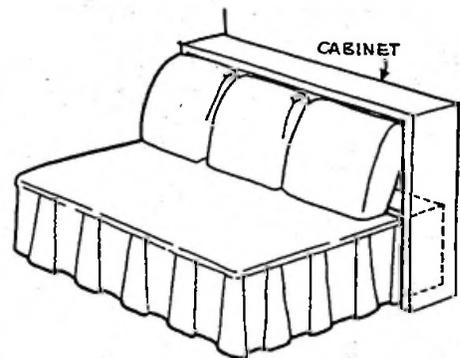
"Casements occasion heat loss; but when open permit of more ultra-violet ray penetration. . . I believe the added advantage of a feeling of being almost in the open air, which the casement affords, has much value in making for contentment. . ."

"The use of non-transparent glass in some kitchens and bathrooms makes frequent cleaning unnecessary; and gives for that reason a slovenly appearance. For stair hall windows in apartment houses, however, easily fingermarked by everyone passing, a rippled glass is almost a necessity. . ."

"Lack of proper curtain rods for corner window has occasioned some pitiful makeshifts. . ."

"A high degree of year-round comfort, combined with saving in heating costs, might be secured by use of the solid shutters frequently used in Continental Europe. Closed after dark in winter, they prevent heat loss by radiation, and diminish street noise. . ."

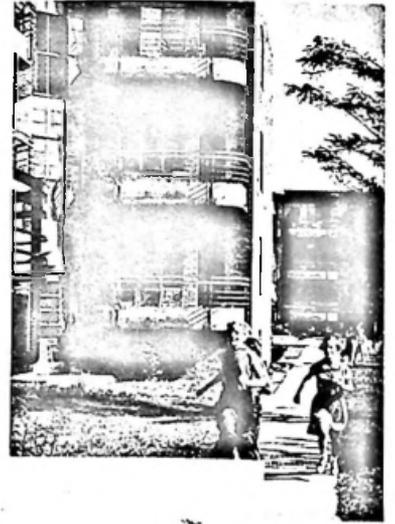
"Cooking ranges should be located at least one foot from the window jambs, according to safety experts, for many fires start when window curtains are blown across the stove."



USEFUL ROOFS AND BALCONIES



Joseph L. Weinberg and associated architects



Tenants do appreciate balconies; under certain conditions they will give them intensive use. The balconies at Lakeview Terrace, Cleveland, don't give tenants quite the desired feeling of privacy. Those at Cedar Central, Cleveland, get intensive use, particularly where a projecting stair well gives them separation and thus privacy

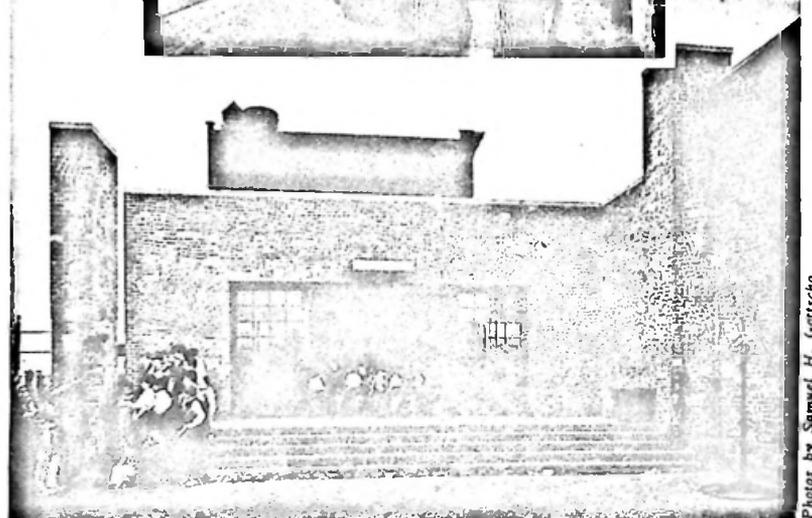


Walter R. MacCormack, architect

Similarly roof areas prove very useful, if properly utilized. At the Madison Square Boys' Club, New York (right), the boys find many uses for the club room on roof, and the terrace effect outside the room makes a fine stage for summer shows. At Lavanburg Houses, New York (below), the children enjoy activities on the roof

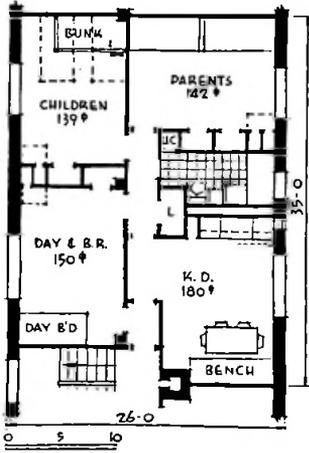


William Sommerfeld, architect

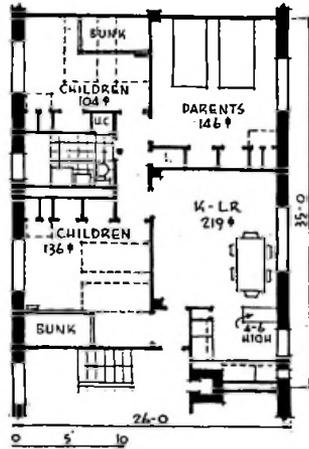


Hoiden, McLaughlin & Associates, architects

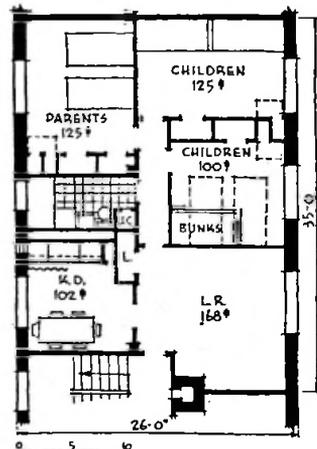
SOME PLANNING SUGGESTIONS



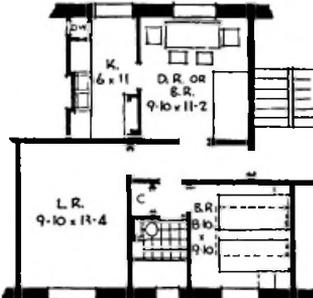
Dual-purpose rooms in a conventional over-all plan. Here living room activities can be divided between the "kitchen-dining" room and the "day and bedroom," with the foyer permitting full privacy in either. Increased usefulness of "parents'" and "children's" rooms further relieves kitchen and living areas



Here kitchen, living and dining room functions are frankly combined in one large room. The kitchen has its own wing, screened from the room itself by shoulder-high cabinets. Still the room can be by-passed through the children's room in case father and mother want some quiet in the evening



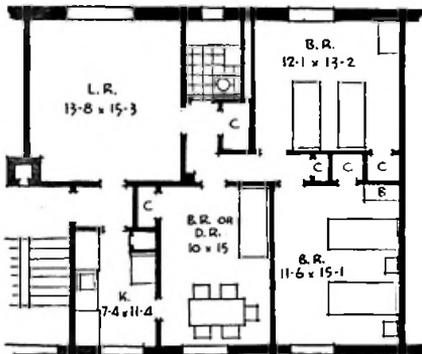
A more conventional arrangement of dual-purpose rooms. Here living room is definitely separated from kitchen-dining room. But the latter area is large, with compact kitchen equipment leaving space for sitting without getting in mother's way. Thus the room relieves the living room in many ways



Brooklyn Garden Apartments, Brooklyn. Andrew J. Thomas, architect

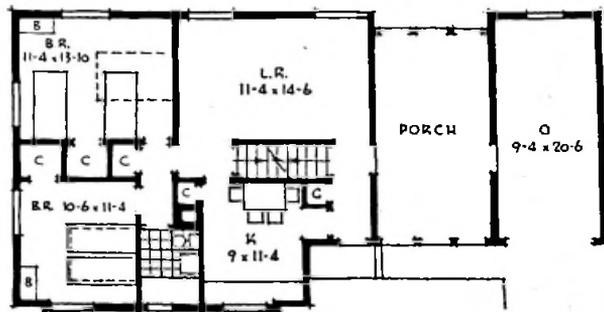
It is unusual in apartment layouts to find the living room so far removed from the entrance, but it gives an ideal living room—out of all traffic areas, and offering complete privacy for sleeping, or for a wage-earner who wants evening rest. The dining room doubles as bedroom

IF ANY ONE CONCLUSION stands out in Miss Coit's study of low-income families and their housing needs, it is that apartment rooms should be designed for multiple uses, to relieve pressure on the over-used kitchens and inefficient living rooms. Above she has drawn three suggested plans containing dual-purpose rooms. By no means intended to be "perfect" plans, they do illustrate how rooms might be given extra usefulness within economical over-all areas. Essential furniture is concentrated with built-in bunks and combination closet-bureau-desks (see page 80) to leave areas clear for activities which too often are concentrated in kitchens and living rooms. They have the "utility-bathroom" (see page 78) to relieve the kitchen of light laundering. And, emerging from the isolation as "bedrooms," these areas are now designated as "parents' room," "children's room," or "day and bedroom." Kitchen equipment is compact, but kitchens themselves are large, to be "kitchen-living" rooms, or "kitchen-dining" rooms; at any rate to contain the multitudinous activities that commonly go on in this area. Also on this page are three plans from actual projects, selected by Miss Coit as having exceptionally good points from the tenant's standpoint.



Hillside Homes, New York. Clarence Stein, architect

An excellent plan for a public housing development. Living room can be by-passed for sleeping privacy; the dining room also can serve as a bedroom, permanently if desired, and the bedrooms are uncommonly large, leaving usable space around the furniture



Greenhills, Cincinnati. Roland Wank; G. Frank Corder; architects

A single-house type of plan particularly good for a southern climate, where complete separation is desired between kitchen and living room. Here, too, the bedrooms are large enough to serve other purposes, and to give plenty of air in hot weather. Closets are large. If the rear position of living room is a bit advanced for low-income families, it does give good cross ventilation through the entrance hall. Stairs lead to two bedrooms and bath on the second floor. The high sash, used in combination with normal windows, gives extra furniture space without interfering with ventilation

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compiled by Elisabeth Coit, AIA

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WHAT'S THE MATTER WITH OUR SITE PLANS

IT'S NOT ENOUGH TO THINK YOU THINK

BY ALBERT MAYER,
Architect, New York City

A Reprint from
PENCIL POINTS — May, 1942

Recent inspection of a number of typical war-housing projects around the country has left me discouraged with what has been produced. The architects designing these projects don't have adequate experience in this new and difficult field of community planning, *have generally missed the deep significance of what is involved* and the opportunity that has been offered them.

To adapt the President's phrase, this generation of architects has indeed a rendezvous with destiny. *But we haven't grasped the concept at all.* In fact, from the generally complacent attitude of the profession, from the absence of distinction and quality of the projects and from their elementary defects, you would say in contrast it was a good deal more like making a date with a broad.

This is a solemn and sacred job, creating the frame of living for a whole community, shaping the lives of people for a generation at least. A big skyscraper or a great hotel may cost five times as much as a community housing 500 families, but it is incomparably less important in human and social values, in benefit or harm to the city or the nation. *Up to the recent past, housing has all been created by speculative builders, from whom we got about what could be expected—a lot of houses.* But now we have the government as a client, we have the inspiration of a national emergency, we have the challenge of creating a new environment.

As a profession, we're muffing these big challenges. *The one challenge we're meeting is speed.* As for the rest—quality, domesticity, beauty, communal and civic life, skillful large-scale planning—we're missing them badly. Yet to do a good job should take no longer and need cost no more than a bad one.

By and large, there are two reasons for the failure. In the case of most architects, their education and previous practise has not equipped them for this

work. However big the previous jobs—whether skyscraper, museum, state capitol or small house—it has always been one building or two buildings, within an existing framework of streets, grades, sewers, roads. Now we are called on to create the very framework itself—the grading, the roads, the street layout, the traffic, the sewers, the water, and a whole civic ensemble. *This is as difficult an undertaking, mentally and technically, as there is.* But—and this is the second reason as I see it—the architect blithely takes on the most serious and important job of his life or of his generation, never questions *his* ability to handle it, doesn't pre-qualify himself by serious study either of other projects or of the desires and aims and backgrounds of the people he's serving, and doesn't feel the need of associating himself with someone who knows a good deal about it: though if he had the far simpler job of a school or hospital to design he would almost certainly employ an experienced consultant as his first step!

* * *

The most prevalent and serious defect in the defense projects is the *bad site planning and site engineering.* It is generally bad, whether considered from the point of view of livability, æsthetics, economy, or durability. Architects of our generation haven't been equipped to do this job well either by experience or education, nor is there too much available in print that is of immediate value.* It is for that reason that this short study is offered on site planning and site engineering. It is *not intended as a text* that will qualify the reader as an adequate technician: but rather as a provocative discussion that indicates the proper approach, states the basic problems and defects, illustrates the principles by specific successful and unsuccessful examples. The purpose of writing this

* For suggested brief bibliography, see end of article.

will be served if it starts the profession to thinking now, if it provokes its readers into inspecting a dozen or a score of projects, into interviewing managers and families living in them, into checking the projects against the criteria and principles here suggested, and into making up their own criteria, their own minds as to what is good and bad, what works well and doesn't work well, and why. The design period allowed in these defense projects is so unprecedentedly short—three or four calendar weeks—that we must do all these things as a pre-

qualification or we never have the opportunity at all. Unless the architect has practically designed projects in his head *before* he is ever assigned a specific one, he will never catch up! He will simply turn out a lot of houses, based on the "hand-out plans" given him, and Heaven help the families living there, the locality, and posterity.

What are the major, common defects in projects? What are the specific reasons for these defects? What are the principles of good site planning and of an inspiring group architecture?

MAJOR DEFECTS IN SITE PLANNING AND SITE ENGINEERING

AESTHETIC AND EMOTIONAL: Buildings should be so grouped with respect to each other, with respect to their mutual color and texture, with respect to their terrain, that they create interest and expectation in people, that they exercise a dramatic impact on people living in them or seeing them. They should achieve this not because they're alien or bizarre—in fact they should be reasonably indigenous though not slavishly so—but because, being (for once) planned and conceived as a unity, there should be a beginning and an end, a focus and a soul.

Current site plans fall into pretty recognizable categories:

1

The USHA-fostered pattern puts buildings in *parallel lines* and at *right angles*. The pattern is so clear and invariable that the moment you enter one end of the place you know the whole project, you know exactly what every other part is going to be like. *There is no interest or thrill or naturalism or living quality.* There is no development and no dénouement and no climax. (Plate 1.)

PLATE 1

600 units. All 2-story brick buildings on a gently sloping site in a north-eastern industrial city. No porches, no canopies.

Just a rectilinear project with no emphasis, no relation in plan or feeling with the rest of the town, no tempting visual stopping place in the site. Combination of playground and community house might have supplied a thrilling climax, but the plan doesn't lead up to it particularly. When you actually get into it, there is no organized plan of buildings around it, but it seems rather as though there had originally been buildings over the whole area and they had simply been plucked out afterwards, leaving a gap which is then the playground.

Places marked A-A and B-B on plan are pleasant; scale of C-C is bad. Drying compounds too prominently visible from main street and from within project.

Parking: Adequate in number and location, but so concentrated in compound and on streets that it looks a good deal like the factories the project serves or the main street of the town.

2

As a reaction against this you find the type of defense project that is *all curves and angles and blocked views!* These are visually and mentally confusing, and often so physically confusing that it is actually hard to create an address system or to find your way in them. (Plate 2.)

In what may be called the USHA idiom there is rarely any change of material, color or texture in even the largest project. In this Confused-Defense type this is often the case, and as often there is an excess or jumble of color and material.

PLATE 2

600 units in 1- and 2-story brick buildings, near a southern city. Hummocky site with pronounced slope into basin marked Low Swampy. Site plan desperately confused to the point where it is difficult merely to find an address.

Section B, marked in dotted lines, is very satisfactory. On one side of the street the houses are in a pretty straight line; on the other side it is curved. This contrast is excellent here and wherever else observed. Relation of Buildings 85 and 86 is effective.

Parking: Grossly inadequate, and too far from houses. As streets are not wide enough to take on-street parking, people park on lawns and in backyards. Site engineering: One side of road is wasted at D-D, also at Buildings 152, 153, 154; also waste of road leading to these buildings. Slopes of banks are excessive for sandy soil. Serious erosion due to this and due to unpaved gutters. When visited, the road had washed out at D-D and had to be roped off.

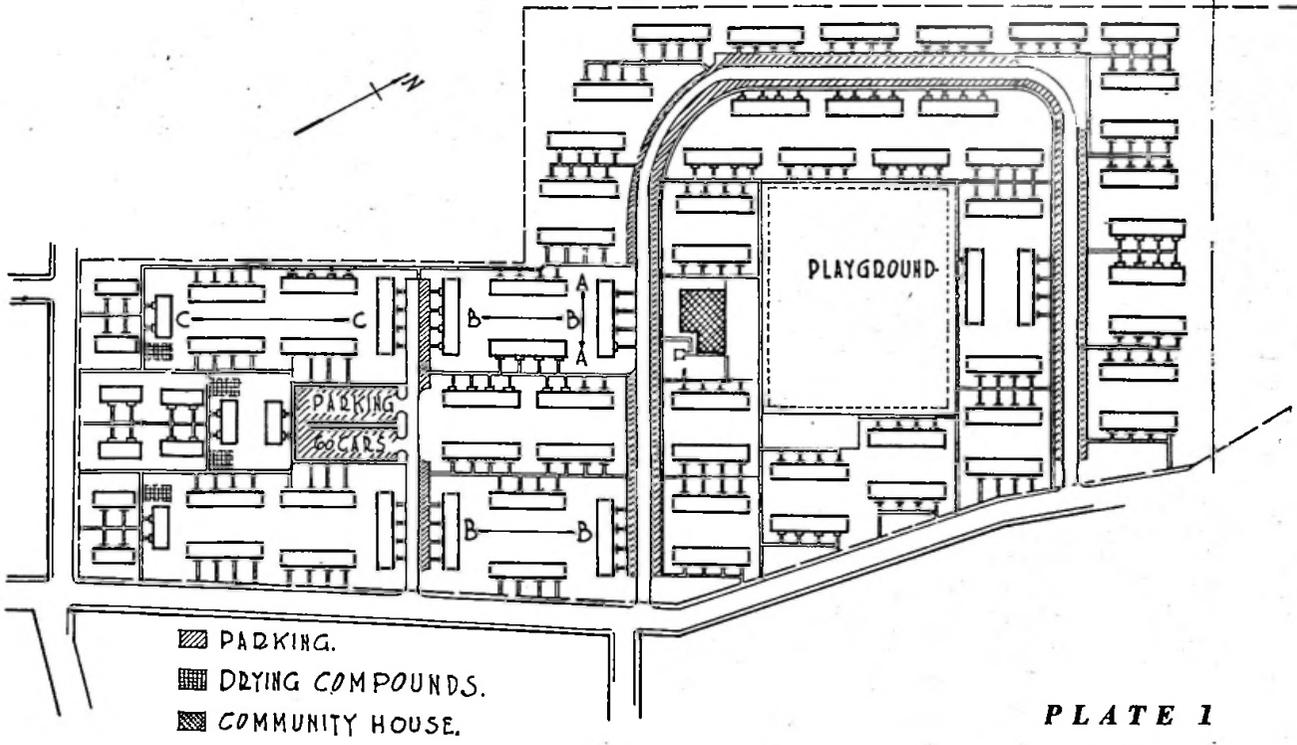


PLATE 1

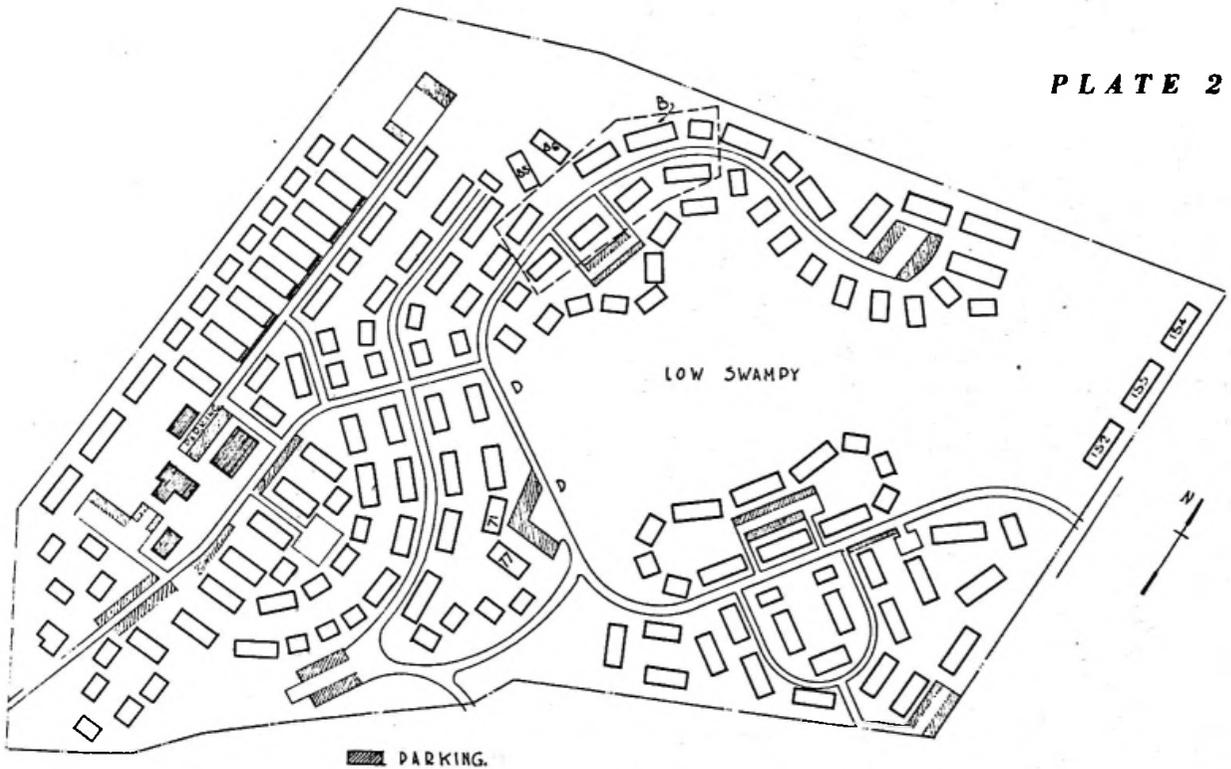


PLATE 2

3

There is a third recognizable type which may be called the PBA idiom. This is a certain organization of dwelling units into buildings of 2, 4, and 6 units which has been pretty much used *without variation, up hill and down dale, in large cities, out in the country.* (Plate 3.) A job right in the middle of nowhere—which yet is composed in large part of 6-unit 2-story buildings, well over a hundred feet long—is rather a shock to encounter in an open plain.

PLATE 3

100 units, 1- and 2-story buildings and combinations of 1 and 2; some buildings are 6 units long. Wood siding. Flat site, sloping down slightly to the west. *In the country.*

In itself an orderly site plan. Of very low density, there is a concentration of units into quite long buildings with unnecessarily large space between. In my judgment, an unsuitable plan for the country with rather shockingly long, scattered buildings; probably much better to have less concentration of units into buildings and more concentration of site plan; result would have been a compact unified effect suitable to establishing a feeling of community in the country.

Also, unnecessarily sparse plan has resulted in practical difficulties. West end of site, use of which could have been avoided, is so close to the water level that there has been difficulty with septic tanks and leaching fields. No sidewalks. Probably OK on this small project with its own loop road and practically no traffic on it.

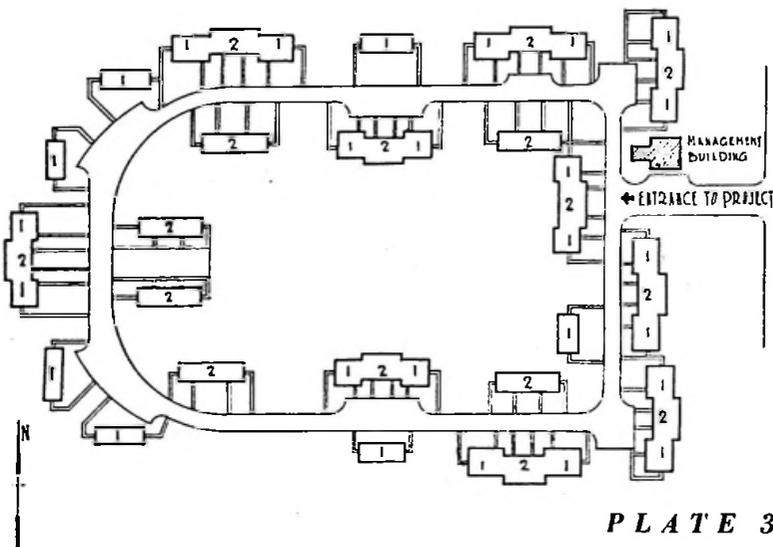


PLATE 3

Almost none of this planning produces a project which develops within itself. Worse still, it shows little or no differentiation around the country. Not only do I know the moment I walk into a USHA project in Syracuse exactly what the other end of the project is going to be like, but I know from the Syracuse project just about what I can expect in Bridgeport or in Louisville! The funny part is that a *great deal of this work has been done by local architects* so that you wouldn't expect such repetitious "formula planning." The confused type of site plan is not so uniform in detail as the other two, but its general character is just as uniform, just as lacking in individual feeling, just as lacking in integration or cumulative force.*

* The question naturally arises as to the degree of responsibility borne by the housing agencies for this situation. Some of the housing agencies such as USHA and PBA had some pretty fixed ideas. Two of the defense housing agencies, Division of Defense Housing, under Clark Foreman, and the Mutual Defense Homes Division, under Colonel Westbrook, gave the designing architects an extraordinarily free hand. But even in the case of USHA and PBA it was my personal experience and impression that an architect who knew what he wanted, had the guts to insist on it, and the knowledge and facts to prove his points, finally could carry out his own conception. In other words, I don't think our profession can pass the buck for the low quality of our performance.

DOMESTICITY AND LIVABILITY: The projects are, by and large, necessarily multiplications of a few single plans. But as it is generally mere multiplication, there is *no sense of a living community* integrated out of individual families. In a large-scale community certainly one needs a feeling of vista, of continuity, but one requires equally a sense of intimacy, of domesticity. In these projects one commonly feels one is *looking right through the project*; one feels an endlessness, as though thousands of families probably lived there, even though the size may be only 300-family. Rarely indeed does one stop and get a feeling of peace, a feeling of seeing an intimate court of two or three or four families. Walking along a project street one looks right through a sea of backyard wash into the next street. For instance, *Plate 4*, standing in Drive A looking down Drive C; and on *Plate 7* standing at A or B or C, one looks through the backyards from one end of the project to the other. Looking at a pleasant court of gar-

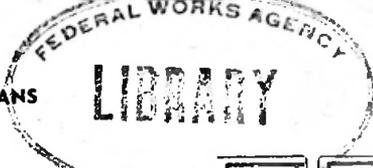


PLATE 4

300 units 1-story high, cinder block, in buildings of 2 and 4 dwelling units. Flat site.

North end of plan is without interest and the impression is of a sea of backyards and wash; south end, as at areas A and B with their short radius curves, is very jumbled. Views into the beautiful lagoon are not developed, the only point of visibility being at P. Except at A and B, project is open-ended. This is particularly trying at J, K, and M where the view is out into some dumps. See text below.

No sub-centers of interest such as could have been developed at Playground. Buildings 81, 82, 105, 106 could have been changed from 2-unit to 4-unit buildings (as shown in dotted lines) which would have given some unity to this area in the project.

The angular relations of the N buildings are good, but unfortunately there is no organized view from them. Court D is good, intimate scale. Groups at E and F would have been equally good except that you look into unkempt, disorderly backyards. The view into G does not have this disadvantage, but as the ground slopes down suddenly at building 43, one sees little but the roof. A 2-story building would have been fine. 9' wide service roads, as in areas A and B, are inadequate. People drive over the lawns and park on them. Parking: Excessively distant in many cases—e.g. Buildings 34, 35, 36, 37, 38, 48, 49, 50 are over 300' from a parking space. People park on lawns and in yards.

Paths: Required at G and H to get from garden to service yards. None were provided, but people have worn their own paths through.

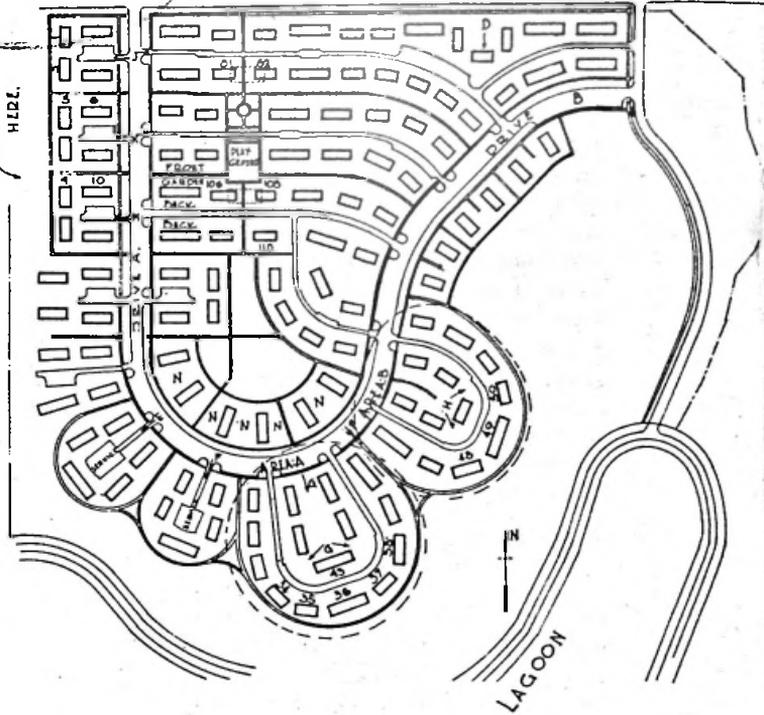
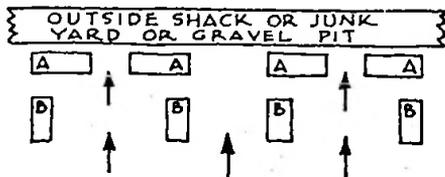


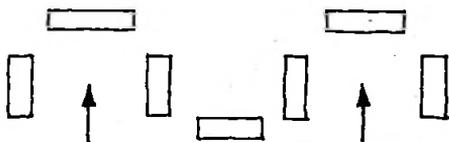
PLATE 4

Catch basins: The project is studded with pines. Their needles clutter up the horizontal tops of catch basins so water doesn't run off. Curb-side type of catch basin is required under such conditions.

dens, one must also see the sides and ends and backyards of innumerable other houses. Standing near the limits of a project, one might expect a sense of enclosure. But, no! One looks through to the shacks beyond, thus:



How easy to have planned it thus:



(and incidentally the end of A wouldn't have looked smack into the end of B).

In another sense, livability is ignored. Often the fronts of one line of houses are opposite the backs of the next line; often the washline backyards of houses face the main street. (Plate 5, "Main Through Street.") For centuries the street has had a social function; a civic function. Whatever we like to do in our own project, we have no right to desecrate the traveled streets of our town by forcing our fellow-citizens to walk or drive through our washing, our tool sheds, our unkempt areas! Nor have we a right to impose on people the necessity of keeping such working areas always spic and span. They simply won't do it, and they shouldn't be asked to. We, as architects, have the job of providing natural, pleasant ways of living. We're not planning toy communities for automatons, but living communities for people a good deal like ourselves, in towns or near towns which should take pride in the new communities, not be forced to hold their noses when driving or walking through them.

The housing of World War I succeeded much better than ours in creating an atmosphere of livability and domesticity. In a town like Bridgeport, where there is much housing of both vintages,

PLATE 5

300 units (all 2-stories) generally of 4 units each in a northeastern industrial city. Generally, the first story brick, 2nd story asbestos siding. Very hilly site.

General appearance is gratifying. While not lacking in unity within itself, its combination of brick and asbestos siding recalls the New England idiom of design and, without being slavishly antiquarian, it gives the impression of being indigenous.

Backyards on main through street are unpleasant; similarly on the other streets.

Community house well placed on high ground, a good unifying focus.

Planning is on contours, essentially good site planning, but site engineering is faulty in detail, so that rain and mud wash against the lower houses. There should have been stronger local countergrading at the houses.

Parking: Adequate for houses on Courts A and B, but inadequate in the remainder of project as at C, C, D, D where there is no off-street parking provision, and the streets are not wide enough to provide it without cluttering up traffic.

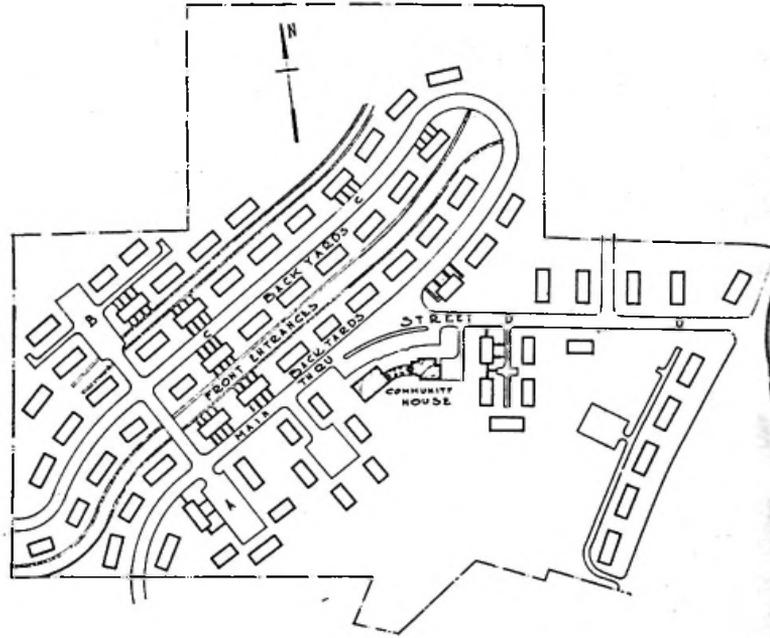


PLATE 5

the contrast is particularly humiliating to our generation of architects. True, those first World War units cost much more than ours, and the trees have grown a lot: but they are basically better jobs, even after allowances are made.

FIRST COST ECONOMY AND MAINTENANCE ECONOMY: Our planning has been generally two-dimensional, and has ignored topography. We have, for example, planned rectangular courts with long buildings at right angles to the grade (Plate 6) where rectangular courts on upper section of plan cross a 15' drop in contour. While this is a defensible parti on flat terrain, it has actually resulted in piling up banks over 15' high in some projects.

This involves greatly excessive amounts of cut and fill. Incidentally, it produces unpleasant living conditions with innumerable steps in the connecting paths (pity the poor mother with her baby carriage!), and minimizes the value of good views from windows over the lower houses, which can be the result of contour planning.

Furthermore, there is generally a failure to grade with the building itself. Many projects seem to have adopted a standard of two steps into the house, whereas a maximum of 4 or 5 steps is perfectly permissible. By using this leeway, imaginatively, we could eliminate much earth grading. This ignoring of topography, this building up of banks, is also going to be (and already is, in some

cases) the source of excessive maintenance cost. Serious erosion is visible in a number of projects; actual washing out of roads. It is particularly severe in sandy soils. At least we should take common engineering cognizance of soil characteristics! Another defect occurs, even in terrain with relatively mild grades. Roads are built crowned in the center, so that rain water washes down the sides or gutters, but as these gutters have in many cases not had paving specified, the storm water washes away the soil and we find erosion occurring at absurdly flat gradients!

Where there is a gradient we do get run-off, at least. Where the terrain is quite flat, proper engineering design for run-off presents a more difficult job of storm sewer design, but it is quite susceptible of solution. In many jobs this has simply been ignored, and we have the unhealthy condition of standing pools of water waiting to evaporate. (See note on page 258.)

The design of roads and of parking spaces involves questions of amenity which are closely linked to first cost and maintenance economy. Trick single-lane service roads 9' wide, insufficient parking space, or parking too far from the house, are conditions that people simply will not stand for and they take the law into their own hands. We may mark spaces on paper and call them lawns, but when the baker's truck or the milk truck or oil truck is standing in a 9' road, another car will drive past it over your paper lawn. If a man's

PLATE 6

450 units, 2-story, 4- and 8-unit brick buildings near a large central industrial city. Roofs: gable and hip. North half of site, steep slope; south part, more gradual slope.

An orderly plan essentially of rectangular courts, moderately interesting but not evolving. Though almost entirely of brick, occasionally part of the elevation is white asbestos siding, as in the center of Building 47. This is pleasing as viewed from within its court or from the street at B.

The contour is quite steep north of Street A. The long buildings running at right angles to the contours cause banks of 12' and higher. Not only is this costly but also rather unpleasant, because these banks keep rising almost to the entrance doors of such buildings as 24, 27, 30, leaving a level space only about 5' wide in front of the house. Also, a great number of steps in all paths make it difficult to manipulate baby carriages. A fixed 2-step relation of building to grade accentuates the amount of grading required.

Close relationship of building corners, as at Points A, is ugly, especially with sloping roofs.

Sidewalks are 1'6" from curbs, too narrow a space

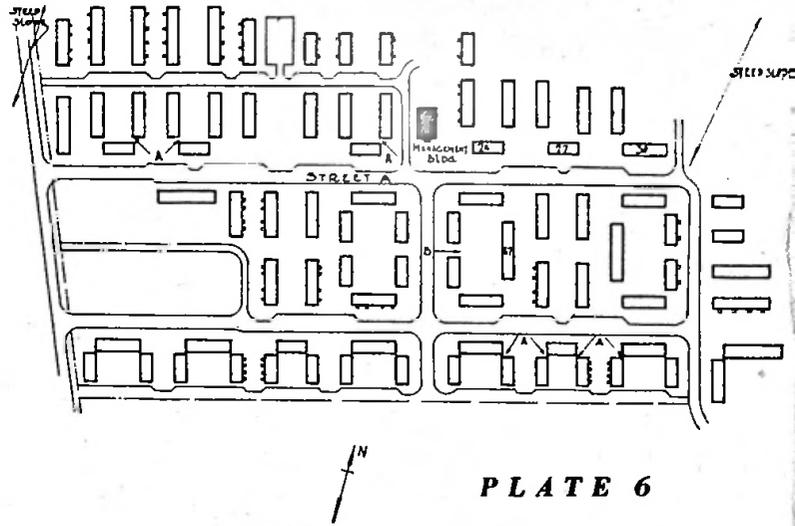


PLATE 6

to plant successfully, hence generally muddy. Either sidewalks should be at curbs, or far enough away—say 4' minimum—to permit a planting strip.

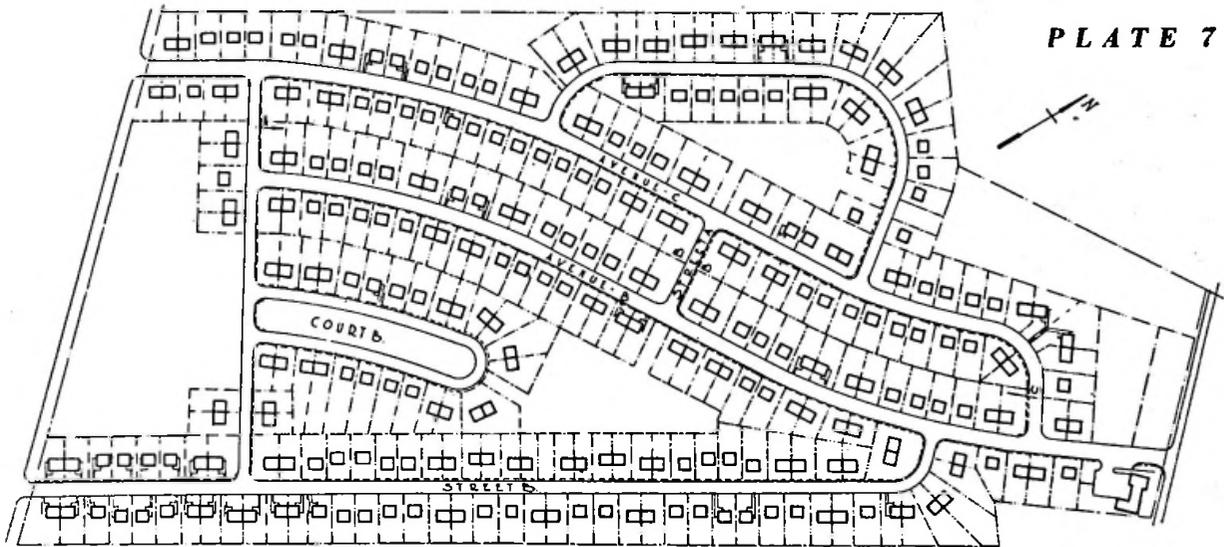


PLATE 7

PLATE 7

300 units, 1-story buildings, single and twin houses, wood siding. Site is very flat.

Failure adequately to consider hook-up with locality: Street B, designed as a local street purely and 24' wide, is at certain times of the day a main through highway, and completely jammed up because the main road is, generally at workers' quilting time, blocked by a train at grade crossing, thus detouring traffic into the little community.

No sidewalks: a dangerous condition, especially on this street.

Flat site with no relief—a few 2-story units needed.

Note weak vista ending looking northeast on Street B. Long-radius reverse curves of Avenue B and Avenue C much better than the straight line of Street B.

Short cross streets at points A, B, C have wasted frontage; could have had houses on them, which would also have served to close these ends and give scale instead of an endless, dreary, treeless, backyard view. On this project, wash is hung between ends of buildings, not in backyards. Absence of backyard paths results in their non-usage. They are, accordingly, unkempt and disorderly.

No storm drainage; pools of water stand until they evaporate.

house is 250' away from his parking space as allotted on paper, he's just going to park somewhere near his house *no matter what the architect thinks that space should be used for*. It's easy to foresee maintenance difficulties and costs. Wasted road frontage (with the accompanying waste in sewer and water lines) is often a close question, or hard to pin down. But clear cases of this waste can be seen in *Plate 2* where one side of the road is wasted at D-D; this is also the case in front of Buildings 152, 153, 154—in addition to the considerable stretch of road leading to those three isolated buildings only, neither side being used for houses en route. In the case of *Plate 7*, there are no houses on street A, and there are two roads in Court B where one would do. In this enumeration of common defects there has been *no attempt to list all faults*, or in detail, but

rather to illustrate types of defects. In the accompanying site sketches showing typical projects, the captions list items in more detail.

In this discussion, the indictment has been couched in a pretty sweeping way. Actually there are some good, stirring, individual projects. *Quinnipiac Terrace* in New Haven, *New Kensington* Defense Project near Pittsburgh, *Clifton* in North Jersey, *Merrimac Park* in Norfolk, *Bellmawr Mutual Homes* Project near Camden, *Bantam Lake* in Connecticut, and to go back a bit further—*Chatham Village* in Pittsburgh, *Carl Mackley Houses* in Philadelphia, *Falkland* in Washington, are all fine pieces of work. *But I don't believe you could mention more than a score*. The generality still applies, and the fact that there are some good ones makes it even more incumbent on architects generally to reach a better standard of achievement.

REASONS FOR THE GENERAL FAILURE

GENERAL REASONS: Lack of experience and technical knowledge of community planning; complacency of the architectural profession; concept of the community as a sum of houses merely, not as a *living organism which should satisfy both the daily needs of its inhabitants and their aspiration to belong proudly to a community with which they can identify themselves and to which they can contribute loyalty and service*. The first thing the architect must do is to acquire the frame of mind not of planning an extraneous job as an outsider, but first to say to himself, "I belong to that community: what would I need and want and expect?" A further criterion in this connection is the necessity, up to now pretty much ignored by architects, of considering the relationship of the new community to the larger community to which it is being added. To cite specific instances—the cavalier treatment of the main thoroughfare on *Plate 5*; the Liberty Avenue difficulty on *Plate 7*. (See the caption notes.)

SPECIFIC REASONS: The greatest single disadvantage is that the architect sits far above the plan, sees the whole bird's-eye pattern, and sees effects that no one else but an occasional aviator will ever see. *The viewpoint that counts is that of a man walking along the street, or sitting in his garden, or looking out of his window*. The short-radius curves, as in the courts on *Plate 4* marked A and B, look swell to the architect-aviator; but from the ground it looks merely like a jumble of houses shooting at you from all sorts of angles with a feeling of disorder, of chaos.

This bird's-eye planning has a second bad effect. It tends to *obliterate consciousness of contour, or topography*. We tend to make plans suitable for paper or for flat terrain.

One of the first steps to be taken, which will counteract this bird's-eye business, is to *make a topographic model and models* of buildings, however crude. And then to place our models at eye level so that we constantly get a man's-eye or a worm's-eye view. If we do this from all sorts of positions, we shall also tend to avoid the defect of:

2. One-Station Planning—There is a *plan tendency to create good views from a few selected places*, e.g. at the head of a street or *cul de sac* looking down it, or in front of a court standing on the center line. But people spend only an instant of time in such positions. Their impression is gained from the ninety-nine other positions they reach in walking or driving through, or from their own window, and from the sitting areas and playgrounds. The window views and the ninety-nine views are at all sorts of angles, and we've got to get a maximum of those views that are interesting and pleasant. See *Plate 8* at points C, D, E, G for some of these unconsidered 99 views. Looking out of a second-story window over one-story houses at another two-story building in the distance (as at Clifton in New Jersey) is an illustration of an *extremely pleasant sensation achieved* from one of the ninety-nine views.

3. Natural and Unnatural Planning—I'm convinced that to plan successfully and permanently we've got to plan naturally. People just don't stand for trick solutions such as *single-lane streets, or backs*

PLATE 8

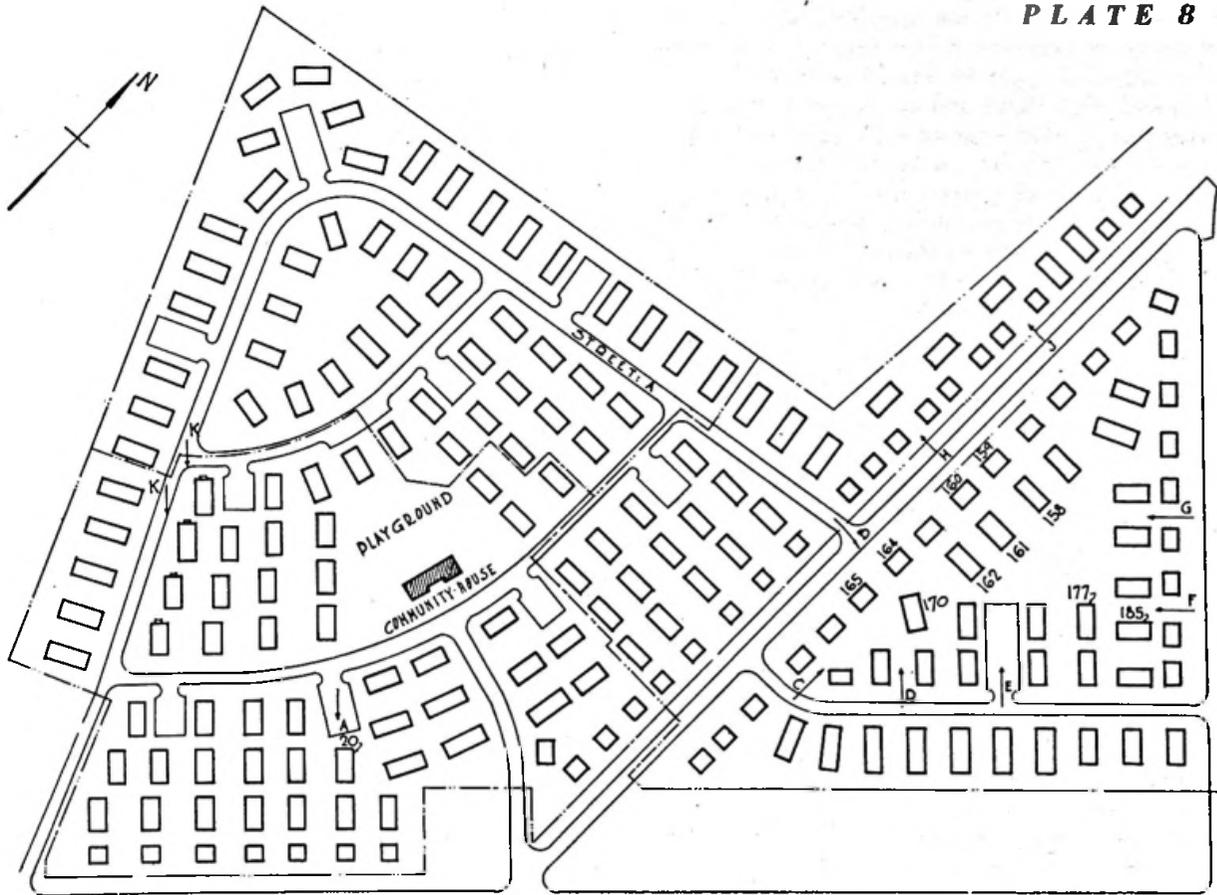


PLATE 8

350 units. 1-story wood siding demountable, in single and twin houses in the south. Site slopes gently. This plan seems to go on and on. Almost everywhere, except at points H and J, you look through the project and not at anything; when you are near the boundaries, you simply look through to what is beyond.

Point A looks at the narrow end of Building 20 and beyond it on both sides. If this building had been turned at right angles, the eye would be happier.

Organization of Buildings 164, 165, 170 is bad, whether viewed from Street A, from Point C or Point D. The eye takes in too many irregularities. E, F, and G yield the same sort of unsatisfactory view. At F you look right past the end of Building 177 where the eye demands a complete end to the vista. If it had been shifted so as to center on this opening, this condition would have been improved, and the south end of 177 wouldn't have looked smack into 185.

Staggered views at K are good, particularly because they are marked by the end entrances.

Parking: Woefully inadequate off-street facilities, and roads not wide enough for on-street parking. No parking at Community House. Erosion. Though grades are flat, the road and sidewalk are eroded. Road is crowned to center, but gutters are not paved.

Paths: Communicating paths in project are 3' wide, too narrow for bikes, even for two people to walk.

to front, or excessively distant parking spaces, or excessive walks to dispose of garbage. Either they violate them right away, thus making a hash of the conceived plan, or eventually the plan itself will be changed where it is possible to do so. If an architect has some brilliant, original idea he will come nearest to having it carried out by making most living conditions natural, rather than by forcing people at all points.

COST LIMITATIONS—SPEED—SITE SELECTION: While, of course, the very rigorous cost limitation does somewhat stand in the way of the finest accomplishment—certainly militates against the best standards and degree of permanence—I feel that this is *not a major cause* of the generally depressing character of the work, or of the major portion of the specific defects encountered. Within the cost limitations we can still do much better work than we have been doing. Indeed, *well-designed projects need be no more expensive than poor ones and are probably, generally cheaper.* The most harmful effect of cost limitation has been psychological. It has sometimes produced

the attitude of "What the Hell, we can't do a good job at these costs anyway!" Actually, these cost limitations are a *challenge to produce a new low-cost idiom*, to abandon the hope of producing simply a watered-down version of Middle Class design and Middle Class ornament, or "individuality." We are forced into *skillful and imaginative use of site* and topography, of materials, of building height, of *design in the larger terms* of the whole street or *cul de sac*. Above all, we have the great advantage of the scale and mass of the group house and the double house; while the Middle Class developer is tied to the inadequate chopped-up scale of his single small house. We are practically forced into unity of design, *but not into monotony*.

The requirement of speed simply puts a premium on the pre-thinking, the pre-experience, the pre-qualification of the architect. The architect has the choice of batting out the job, using the government hand-out unit plans, putting them together into stereotyped site plans and thus pushing the job out; or of analyzing such hand-outs and thinking out site plans and community requirements long before he has a job. *Then the minimal design period becomes simply the end fragment of a long and adequate process, instead of being the whole inadequate process.*

In this connection, it would be fine if the authorities notified the architect of his selection ahead of time—as they often have done—so as to give him more time in fact, if not in theory. And still further, where feasible, the architect might be called upon for his opinion on contemplated sites—for of course a good site is half the battle!

SUGGESTED REMEDIES

The statement and discussion of defects has in itself stated or implied the remedies. There is just one general suggestion that may be added. The architectural profession is lucky—or it may be unlucky if we don't deliver a finer account of ourselves—in that *projects are being handed out generally to local men*, for design. If the rather natural practise were followed, that characterizes the award of industrial defense work, of picking only the few best qualified and recognized organizations, the profession would be out of luck.

There are Albert Kahns in housing and community planning, some widely known and recognized, some not so generally known. It seems to me that *most architects*, who have luckily (and possibly prematurely) been projected into this vastly significant and complex work, *would do themselves and the profession a service by associating themselves with such men* in one way or another, so that they could achieve the benefit of mature experience. This doesn't mean a sacrifice of their own ideas, but it does mean the assurance of technical adequacy and the benefit of trained criticism and experience brought to bear on their own ideas *during* the design period rather than after the project is built, when the defects are apparent but it is too late to do anything about it.

From my observation, and from actual discussion with them, it is quite apparent that the *speed of the program prevents the Washington authorities or the local authorities from contributing really effective criticism*. The Consultant or Associate plan has been used in a number of instances and, as far as I have been able to check, has worked well.

SOME DESIGN PRINCIPLES AND IMPRESSIONS

These "principles of design," offered with some diffidence, are simply the results of my own thinking and of my observation of what does and doesn't work out well in practise.

UNITY OF PROJECT AND DRAMATIC INTEREST: The whole community must be the basis of design. We must get the sense of the build-up of individual homes into a community. We must avoid the endless, pointless, sterile rows of houses that don't reach a focus anywhere; but we must equally avoid the developer's overindividuality of interest which chops up his development into quarreling atoms, which is tawdry and meaningless, and which by violently avoiding monotony actually achieves a restless super-monotony.

We can achieve the unity and the drama which a community requires, in two ways. The community as a whole requires *some focus impressive in itself*, and heightened by a site plan which inevitably leads into it. This focus may be a community

house, or a playground, or a fine grove of old trees, or a group of two-story houses in a one-story community. For failure to capitalize such a focus, see the playground and community house on *Plate 1*, important in itself, but masked from most parts of project. See the handling of this idea of a community focus, *Plate 9*, which has turned out well. The planning leads up to the school and the Community House, each of which can be seen from the two highways.

But we require also *sub-centers of interest* and a domestic scale. For example, in a project of long continuous vistas, we can get the contrast of occasional intimate courts, or we can plan a terminus of a two-story brick building to an avenue of one-story asbestos siding houses. See proposed change

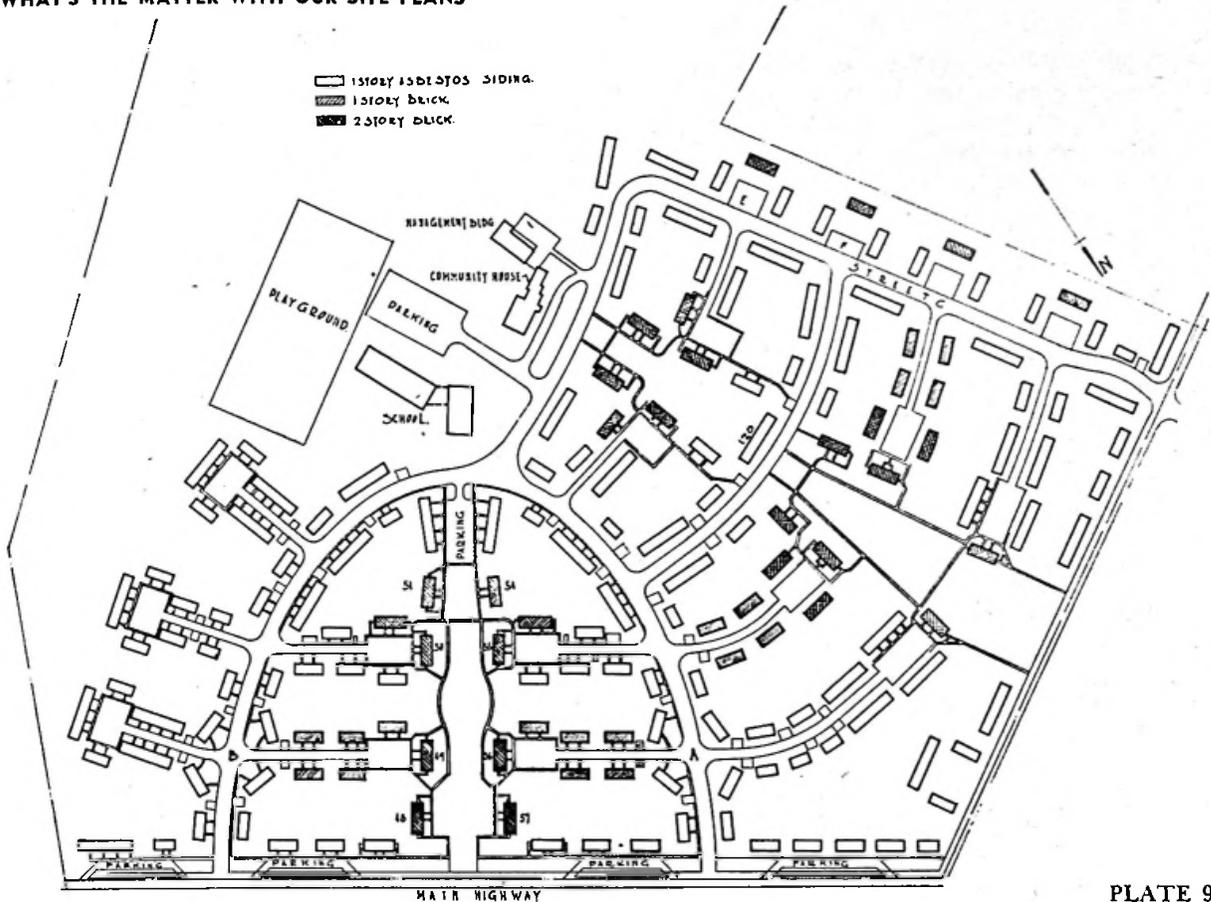


PLATE 9

at playground on *Plate 4*, where small Buildings 81 and 82, 105 and 106, which don't terminate the vista, could have been changed into longer centered buildings (shown dotted) to have created such a sub-center of interest.

I think we must avoid the completely open-ended community plan, which you *always look through*. We certainly don't want an entirely self-enclosed community, but we do want a *sense of definition*. I would say that we should consciously place our open ends where there is a decent view—a park, a church spire, a hill—for with indiscriminate open ends we not only have a moth-eaten appearance, but we are subject to the outside ugliness that already exists or may later descend on us. See sketch of suggested change at edge of project on page 249. See also the lame vista ends on *Plate 7* looking north on Street B; at the confusion of Buildings 164, 165 and 170 on *Plate 8* looking east on Street A.

PLATE 9

(Defense Housing Project designed by the author.) 500 units, 1- and 2-story, 2- and 4-dwelling units. 2-story units are brick with flat roofs and overhangs. 1-story units are brick, asbestos siding or wood, some with hipped and some with gabled roofs.

Note views through the project to the foci of the school and the community house. Example of secondary foci: the diamond shaped disposition of buildings at A and B marking cul-de-sac entrances; the 2-story brick buildings generally at heads of cul-de-sacs. Note one-story Building No. 120 which was placed where it is to break up the possibly over-monumental axis terminating at the community house. This is not so successful.

Note axis from main highway to school. Buildings 48 and 57, 51 and 54 have front gardens on this axis; but Buildings 49, 56, 50, 55 have their backyards on it—not so good. It is hoped the planting will adequately handle this situation.

Note brick cul-de-sacs whose purpose is to clarify the plan concept.

Note courts off Street C, domestic in scale and feeling, contrasting with the long views in other parts of the project.

Wherever possible, backyard areas are more or less enclosed by buildings.

Parking: Provision for 1 car per house in off-street parking. This is handled in three typical ways: small indented spaces as at C, D; larger concentrations (6-10 cars) as at E, F; and 10-12 cars at heads of cul-de-sacs. Probably this last is over-concentration.

2. CLARIFICATION OF PLAN—MATERIALS AND COLOR: As we are not planning for birds or aviators, we must do everything possible to make the elements of our plan, its skeleton, clear to the ordinary observer visiting the project or living there. One way to achieve this is to avoid spacing lines of buildings equidistant from each other—for example, the street fronts might be 70' apart and the yards 110' apart. Another way is to *emphasize your plan by color and materials*. If, for example, we can use some brick we can achieve some gaiety and contrast by individual brick buildings at significant points, and reserve the bulk of our brick buildings for use in zones—e.g. one whole *cul-de-sac* in brick so as to distinguish it from adjacent *cul-de-sacs* rather than to let the whole job pile up, or become bizarre by too indiscriminate a mixture. Color can be used similarly. We would not want to use just one color in an entire zone, but we can use a family of colors which will give some contrast but still yield a larger unity. *The overfrequent use of violent color contrasts from house to house is not successful* in the two or three projects where I saw it.

Variation in building heights is another element in clarification, in emphasis, and in variety—as for example to emphasize a ridge or an end view. But if used indiscriminately, or if two-story and one-story are so placed as to give a sawtooth outline, the effect is restless.

Of course, the use of material, color, and height, in some such ways as here suggested, must be kept *within the bounds of cost limitations*. We mustn't overdo it, and we needn't. I have found that in projects of as little as 250 units, these purposes can be achieved without requiring more type plans than can be economically standardized.

3. INTERESTING AND UNINTERESTING BUILDING RELATIONS: The long, straight street as Street B, *Plate 7*, is *dreary* where there is no striking end vista. By contrast Aberdeen Avenue (Avenue B) and Swan Street (Avenue C) on long reverse curves are much more interesting and create a feeling of suspense.

The short-radius curve, as on *Plate 4*, (F, G, and H), is definitely a wash-out, a mix-up.

The use of the slightly angular relationship of buildings, as at Points N on *Plate 4*, is *definitely stimulating* as compared with the parallel.

The emphasis and opening up of the four units in a diamond shape, marking the street intersections as at points A, B on *Plate 9*, works out well. Buildings placed at right angles to each other, and almost touching—say less than 10' apart—are *definitely unfortunate looking*, particularly when there are sloping roofs. This is architecturally weak and disappointing; the composition *seems to sag where it should be strongest*. (*Plate 6*)

4. PARKING SPACES AND THE FEELING OF DOMESTICITY: Large concentrations of parking, as on *Plate 1*, are definitely destructive of a feeling of domesticity. The impression is of Main Street, of industrial plant, of sports arena, not of a community of homes.

And aside of appearance and amenity, *the whole question of parking hasn't in general been systematically studied*. Often, there is not enough parking provided, and the distances are excessive. (See notes on *Plates 2, 4, and 8* for example.) From observation I would say that parking should, if possible, be provided on the basis of 1 car per family plus 50 percent for visitors; that parking close to the house is a necessity especially in northern climates; that concentration of more than 6 cars is unpleasant; and that the unit and site plans should be such that eventually every dwelling should be able to have its garage either attached or close by. *The one place that requires concentrated parking is the community house*. The projects I've seen do not provide adequate parking facilities at this point.

5. DEFINITION OF SPACE—ORIENTATION: The general visual merging of backyard and front garden and drying yard and street is, to me, most unpleasant. *It is a sloppy way to live*. I believe that functionally and spiritually they require to be separated as far as reasonably possible. I believe that end houses should have been placed blocking the backyard view, as would have been easily possible on *Plate 7* at points A, B, C; that the facing of fronts and backs, the facing of backyards on a main street as the main street on *Plate 5*, the placing of drying compounds as in *Plate 1* where they are visible from so many points in the project, that *these awkwardnesses should have been avoided or minimized*. They can't all be 100 percent eliminated, but we should plan on the principle of minimizing their frequency and prominence mainly by the placement of houses; and in some cases where it can't be avoided, by walls or hedges.

I am aware that the ideas of planning expressed in this paragraph contravene the theory of uniform optimum orientation. *But I don't take this theory of uniform optimum orientation too seriously*, for a number of reasons. First, the two-room-deep group house without re-entrant angles will always get sunlight (or shade) in some rooms at any time of year. Second, in the case of one- and two-story buildings with front and back yards, we can always go outdoors for sun if we want it. Third, personal preference enters in too strongly. For example, some people like afternoon sun in the living room, others don't. While on the other hand we can all agree on some definitely advantageous characteristics of orientation, these seem to me of less weight in pleasant living than the factors discussed in the preceding paragraph. We should

certainly not fail to weigh the orientational and prevailing wind factors, especially in the extreme southern and northern latitudes of our country, but it is only one factor among a number.

6. *RELATION OF INSIDE TO OUTSIDE*: In general, we haven't yet planned imaginatively to produce a feeling of relationship and transition from inside of house to outside yard, street, and garden. *The most extreme case was one where there were all end entrances so that one had the feeling of passing by a series of closed boxes, thus:*



This end entrance *parti* was well handled by the sawtooth pattern on *Plate 8* (K) but my recommendation would be against exclusive use of end entrances.

Decent-sized canopies or porches, where they can be afforded, are good tie-ups between interior and exterior, *not only visually but functionally and pleasurably*. I would rather spend the money on a roof canopy and a platform even for only one or two chairs, than on a stone or other entrance door motif such as some of the projects have. These are useful, too, in protecting our non-weather-stripped doors. Both for appearance and use they've got to be sizable—at least long enough and deep enough to shed water away from the entrance.

Absence of back paths—usually a question of economy—often results in these areas being *unused due to dislike of wading in mud!* This gives a paper-filled, neglected, woe-begone feeling to these back yards. Paving, or at least gravel under the wash-lines, is important as promoting convenience and use of the exterior spaces.

One terrific and yet *unsolved problem is a convenient way of handling garbage*, and one that doesn't hurt the appearance of the project either always or at least on garbage collection days. The different systems of collecting garbage, the frequency of collection, the question of separation or not of garbage and trash and bottles—all these differ in different localities. The only point that can be made here, without going into too great detail, is that it's a mean problem and that we must consider it *not an incidental but a major one* in planning and detailing.

7. *ONCE MORE—FOCUS, DRAMA, NATURAL FEATURES*: A successful example is the Community House on *Plate 5*; the location is central, on the highest spot, the project naturally converges to it, and the design itself is good.

In the project shown on *Plate 6*, there are some marvelous views from the upper end of the project out over the river far below, but it is visible only from the immediately adjacent houses—the project as a whole is not made aware of it, either by naturally opening out toward it or by placing some open spaces and playgrounds to get the full benefit of the view.

In the project on *Plate 4* is a lagoon just beyond the houses, to which the view opens occasionally, as at point P, but again it is *not handled or heightened as a recurrent element*. This project is studded with tall, straight pines which are stunning from a distance, but curiously enough one is not sufficiently conscious of them when in the project. The reason is that the low, one-story houses keep the eye down, well below the tree crowns. If some or all two-story buildings had been used, the eye would have carried up; the tree crowns and the houses would have become associated in a thrilling effect.

In the insistence of my feeling for the focus, the drama—the sublimation or epitome of the project if you like—I would not be understood as seeking the monumental. *That kind of pretentiousness must certainly be avoided in these communities as being contrary to their spirit*. The excessively long formal axis in the Red Hook project in New York, for example, is just simply *out of place!* On the other hand, the management or community buildings in a number of the projects are so inconspicuously designed, so like the ordinary houses, that one gets no sense of lift. The element doesn't produce any heightening or focusing effect at all.

Perhaps this strong statement of defects, remedies, recommendations, principles, sounds too dogmatic and pontifical. Having thought a good deal about these problems and observed and studied my own work and a large number of other projects, these are the conclusions I've come to. No one else need come to all the same conclusions, probably shouldn't. *But every architect entrusted with the design of a community should face every one of the problems here raised*. He should search his own mind and search out projects and people, should formulate his own answers, should, above all, feel that he is being given a wonderful and sacred opportunity to justify himself, his profession, his generation. We're being given a grand chance. *If we don't do a grand job, or at least a worthy job, we're likely not to get another!* We're likely to be frowned out by the government bureaus and the architectural specialists who, *at the lowest*, can at least always be counted on to *do a competent job*.

Certainly that would be *the easiest way for the government* to get the job done. On the other hand, the government and the country will gain in the long run if the work is spread through the

profession, for the vast post-war work will gain from the broader, firmer base thus created. But if we do work now that fails to justify the confidence placed in us, there is just not going to be any long run, as far as we're concerned.

There is even a more important client than the Federal government whom we've got to convince. In the last analysis, the government represents people. *If people are alienated by the work we're doing now, this is going to be reflected in the post-war housing program.* If they find that we haven't been able to make good on the rosy picture we've given them of the advantages of large-scale housing and community planning, the people and Congress are going to tend to say NO to further efforts.

The ultimate client and the ultimate critic is posterity. Architecture cannot lie. It's there for all to see and there it stays. Our generation of planners is being given a great, though by no means a perfect or unimpeded, opportunity. *Either we'll*

be looked upon as a generation not big enough to measure up to the demands made upon us, or we will be considered among the most significant builders in history. Of course, some of the conditions for great performance are beyond our control and must be molded and determined in other spheres. But *no element in the whole complex has so important or significant a role as ours,* not only because we have the immensely important function of designing an assigned project—on some of the aspects of which this essay tries to throw some light—but because, from our intimate connection with design and execution, we should help throw light on and help determine some of the basic conditions determining the design and nature of the communities. While these more basic considerations are beyond the chosen purview of this discussion, I urge my fellow architects to dig into them, to find out about them, to seek and play a part in determining them. In other words, the Ideal is the Architect-Leader-Citizen.

(Author's note, see page 250—In this condemnation of some of these site engineering and utility performances, the field supervision by the housing agencies must take a good deal of the blame in many cases. Often grades are substantially changed from those on the plans without consulting the architect or getting his analysis; knowledge of good practise in grading, backfilling, and paving is lacking, certain preventive landscaping such as early planting of banks and use of ground cover is not employed. Ground cover should be an essential part of the specifications for these projects, for erosion takes place even with reasonably good engineering design if there is nothing to hold the earth together.)

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Rebuilding Urban America—by HENRY WRIGHT. Columbia University Press. A comprehensive job of analysis and synthesis by one of the finest community thinkers and creative topographic planners this country has produced.

Town Planning—by THOMAS SHARP. A Penguin booklet. A provocative, short, non-technical discussion of the nature of a community, of town and country development and planning, of the architectural defects of present work and the architectural principles that should guide it and have guided it in the successful work of the past. Written about English conditions, it applies equally well here.

Site Planning in Practice at Welwyn Garden City—by DE SOISSONS & KENYON (the architects of Welwyn)—Ernest Benn-London. A unique and superlatively useful study by site plans and diagrams and photographs which are intimately related to each other.

The Design of Residential Areas—by THOMAS ADAMS. Vol. 6 of Harvard Planning Studies, Harvard University Press 1934. "Basic Considerations, Principles & Methods." A practical handbook giving data, design and detail of streets, roads, sewers, etc. Though not too applicable in detail to present work, it seems the best study available; yet does not ignore the general principles involved. (One may, however, well differ with their principles.)

Also, two useful short studies of community planning by actual practicing architects, which are, however, more applicable when the architect has more responsibility in studying basic conditions than he is permitted in defense projects:

A Technique for Planning Complete Communities—by ALBERT MAYER. Architectural Forum—January and February 1937.

An Outline of Community Housing Procedure—by CLARENCE S. STEIN. Architectural Forum—March, April, May 1932.

PLANNING HOUSING FOR PEOPLE¹

by Catharine F. Lansing,
Management Division, New York City Housing Authority

When one of our managers starts the assignment of families to dwelling-units, he is confronted with the problem of fitting demand to supply--that is, fitting the families approved by his tenant selection staff to the dwelling-units available in his new project. His guide in this task is the Authority's occupancy standard, which goes into elaborate schedules and schemes for counting children at certain ages as adults and at certain other ages as nonexistent. This device for reconciling the families to their future homes considers also sex differences and family relationships. The result often turns out to be too similar to a neatly fitted jigsaw puzzle where a change in one piece (or person) disrupts the pattern. Strangely enough, this system means crowding in some apartments and waste in others.

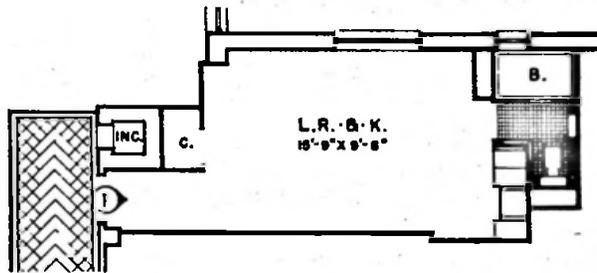
A greater problem for the management than apartment assignment, however, is turning down or turning out single persons or large families. For years we have been cutting our slice out of the middle of the loaf. Hence, in order to more adequately serve low-income families of widely varying composition, the New York City Housing Authority, in initiating plans for the design of its first state-financed housing development, 1501-unit Fort Greene Houses, decided that it would reconsider the fundamentals of project planning. It seemed to the Management Division and to Mr. William F. R. Ballard, Chief Architect of Fort Greene Houses, that the basic criterion should be planning for persons. In other words, the unit of measure would be the person and not the room or the square foot.

So the new scheme evolved and in use at Fort Greene Houses faces the fact that families are made up of varying combinations of persons with varying degrees of need for bedroom privacy. Because the funds for the houses were secured from the New York State Division of Housing rather than the United States Housing Authority, it was possible to include accommodations for single persons and for very large families--impossibilities under the United States Housing Act because of its definition of the family and because of its dwelling-unit cost limitations.

SINGLE-PERSON UNIT

In drawing up the plans for Fort Greene

Houses, the basic need of a single person was considered to be a living area which might include sleeping within the same major space. Auxiliary to this, it was felt, were the needs for a closet or storage-space, kitchen equipment, and bath and toilet facilities. The minimum floor area set up for the combination bed-sitting room was 150 square feet, with cooking equipment provided adjacent to this space. A large closet with suitable storage space for linens and auxiliary equipment was provided, as well as water closet and bathtub. Further economy was effected by not duplicating sink and handbowl.



1 PERSON APARTMENT.

TWO-PERSON UNIT

The needs of a two-person family were recognized to be, first of all, bedroom privacy which would secure sufficient space for two single beds in one room and living-dining space in another. The former plan had envisaged a kitchen and a large combination living-sleeping room as serving two persons. This was found to be unsuitable to low-income families on account of the unavailability of alternate rooms for sleeping. The new plan permits emergency sleeping in the living room by one of the members of the family in case of illness. Just as important, this arrangement permits privacy to the person sleeping when the other member of the family engages in work or recreation in the living space.

THREE-PERSON UNIT

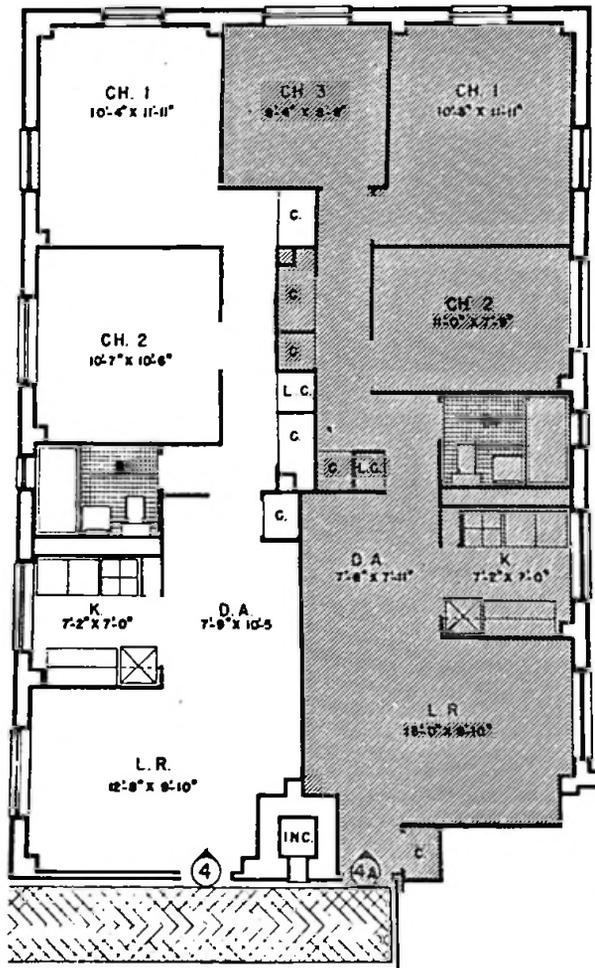
The three-person type of plan illustrates clearly the new departure in our thinking. It was realized that in a three-person family, it is always possible to find a combination of two persons who can use the large bedroom and one member who needs a separate sleeping room. Therefore, one master bedroom of 120 square feet and one single room of 80 square feet is provided. The living room and kitchen are combined, having a total minimum

Paper prepared early in 1942 for NAHO by Miss Lansing.

area of 180 square feet. Complete bedroom privacy is assured and no elaborate occupancy formula is necessary. The family may consist of father, mother, and child; or mother, daughter, and son. No involved inquiry into age and sex is necessary--no shifting as long as the size of the family remains constant. Counting children under two as persons for the purpose of initial occupancy permits a further stabilization in the tenancy and goes far to cut intra-project moves.

FOUR-PERSON UNIT

The four-person apartment demonstrates even further the new type of thinking. Two types of apartments were designed for the four-person family. In the first, two double bedrooms were planned, one of 120 square feet minimum and one of 110 square feet, thereby providing for families in which the four persons divide easily into two units. A second type of four-person apartment was designed to give greatest flexibility. This type provides



TWO TYPES OF 4 PERSON APTS.

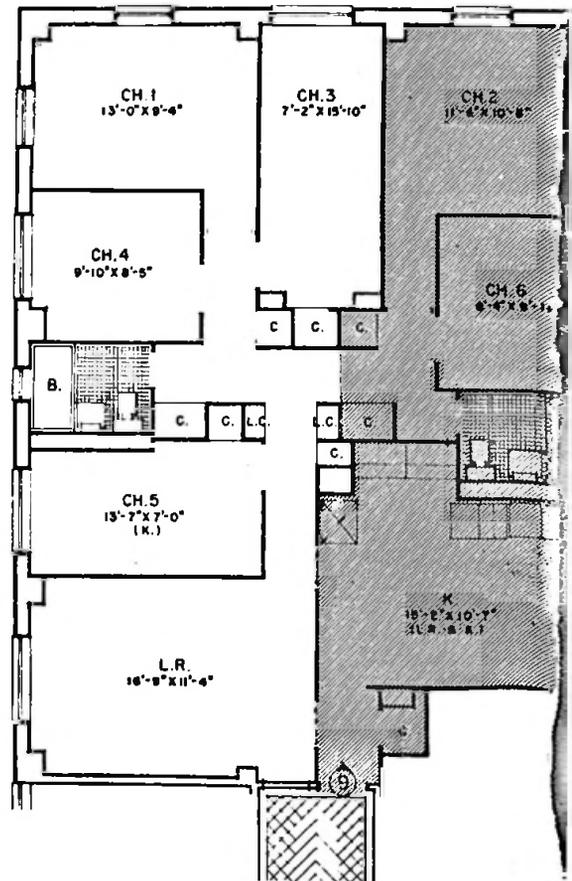
one double bedroom of 120 square feet minimum and two single bedrooms. This takes care of the family with two children of opposite sex. It is obvious that this design represents an economy over the use of the average four-person apartment, where two of the rooms could be used for an additional occupancy if designed as double bedrooms.

FIVE- SIX- SEVEN-PERSON UNITS

Continuing the same line of reasoning, a five-person apartment provides a single bedroom and two double bedrooms. The six-person apartment has three double bedrooms--the first with a minimum square-foot area of 110 and the second and third with a minimum square-foot area of 110. Variations of the above six-person apartment were designed to include two double rooms and two single rooms or one double, one single, and one triple. The seven-person apartment continues the same line of thought, providing three double bedrooms and a single bedroom.

FLEXIBLE EIGHT- OR NINE-PERSON UNITS

In addition to tailoring Fort Greene apartments to fit family needs, another new feature of their design is the flexible apartment



9 PERSON APARTMENT. CONVERTIBLE TO A 3 PERSON & 5 PERSON APARTMENT.

National Association of Housing Officials

The National Association of Housing Officials is a private, non-profit, nonpartisan organization of officials, agencies, and citizens directly concerned with planning, building, managing, financing, and regulating housing for families in the lower and middle income classes.

PURPOSE AND PROGRAM

Its purpose is to better all types of public administrative practice in housing. To this end, it publishes newsletters, committee reports, special studies, and the Housing Yearbook; holds national and regional conferences; offers a consultant service; and in other ways acts as the clearing center for housing officials. A list of publications and further information about the Association's activities are available upon request.

ORGANIZATION AND MEMBERSHIP

Policies of NAHO are determined by a Board of Governors comprising active officials in federal, state, and local housing agencies. Its program is carried out by special and standing committees, regional councils, and the Management Division. The latter is directed by its own Executive Council. It renders to persons engaged in management activities of a housing project or program more specialized service than is available from NAHO itself. -

Individual and agency type memberships are available in the Association and individual memberships are available in the Management Division.

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