

The Urban Design Reader

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"The Neighborhood Unit"

from *Regional Plan of New York and Its Environs* (1929)

Clarence Perry

Editors' Introduction

Reactions to the excesses of the nineteenth-century industrial city had long since occurred by the late 1920s, and new "scientific" and rationalized approaches to city building were well under way, most particularly public health and housing reforms. Garden suburbs, or something approximating them, were being built throughout Europe and North American cities and quickly occupied as emerging middle-class families sought escape from the congestion and perceived ills of central cities. The outlying suburbs were made possible by the rise of widespread automobile ownership, but ever increasing automobile traffic was beginning to cause urban and suburban woes. Traffic dominated the public space of streets, forced pedestrians onto sidewalks, and was perceived as dangerous for children.

Within this context, members of the New York Regional Planning Association of American (RPAA) looked to how to rationalize the burgeoning New York region and prepared a comprehensive regional plan, funded by the non-profit Russell Sage Foundation. The plan dealt with such matters as transportation, open space, housing, and commerce. Within the plan, Clarence Perry (1872–1944) articulated a distinctly American version of a garden suburb based on the concept of the self-contained neighborhood unit (Raymond Unwin and Barry Parker conceived their garden suburbs as larger wholes). The neighborhood unit was centered on an elementary school and community center, and bounded by arterial streets where apartment buildings, retail, and services were located. Ideal neighborhood size was 5,000 to 6,000 people, determined by the population necessary to yield 800 to 1,200 elementary school age children, deemed the most advantageous school size. Within the neighborhood district, through traffic was discouraged by an internally oriented curvilinear pattern of narrow streets. Parks and playgrounds were distributed throughout, connected by pedestrian paths.

Principles of the neighborhood unit concept were refined by fellow RPAA members Clarence Stein and Henry Wright in their 1928 plan for Radburn, New Jersey, which introduced superblocks, culs-de-sac, separated pedestrian and vehicle roadways, and houses oriented toward rear walkways and with garages facing the street. After World War II, planners and real estate developers seized on the neighborhood unit as a module for large-scale planned unit developments. In 1936, a much reduced version of the concept was codified by the Federal Housing Administration (FHA) into subdivision standards. These standards had and continue to have an enormous influence on the form of American suburbs. The firm of Harland Bartholomew and Associates incorporated the neighborhood unit concept as a central planning principle in many of the comprehensive plans it prepared for over 550 American cities between 1919 and 1984.

The idea of planning the city around neighborhood units remains strong today, as evident by both the Smart Growth Movement's and the New Urbanism Movement's focus on neighborhood design, and by the many recent city sponsored urban design plans that focus on developing urban villages, most notably those for

St. Paul (Minnesota), San Diego (California), and Seattle (Washington). Although research has shown that neighborhoods are fluid rather than physically bounded, and that people's social networks and daily routines extend far beyond the immediate areas in which they live, people nonetheless identify strongly with their local neighborhood. Offering a counterpoint, Tridib Banerjee and Willam C. Baer's book *Beyond the Neighborhood Unit: Residential Environments and Public Policy* (New York: Plenum Press, 1984) challenges the applicability of the neighborhood unit concept in contemporary cities.

Perry's other writings include *Housing for the Machine Age* (New York: Russell Sage Foundation, 1939). Other writings on neighborhood theory include Kevin Lynch, "City Size and the Idea of Neighborhood," in *A Theory of Good City Form* (Cambridge, MA: MIT Press, 1981) and Suzanne Keller's *The Urban Neighborhood: A Sociological Perspective* (New York: Random House, 1968). See the Editors' Introduction to Lewis Mumford, "The Garden City Idea and Modern Planning," the previous reading in this volume, for writings on garden cities and garden suburbs.

AUTHOR'S INTRODUCTION

What is known as a neighborhood, and what is now commonly defined as a region, have at least one characteristic in common – they possess a certain unity which is quite independent of political boundaries. The area with which the Regional Plan of New York is concerned, for instance, has no political unity, although it is possessed of other unifying characteristics of a social, economic and physical nature. Within this area there are definite political entities, such as villages, counties and cities, forming suitable divisions for sub-regional planning, and within those units there are definite local or neighborhood communities which are entirely without governmental limits and sometimes overlap into two or more municipal areas. Thus, in the planning of any large metropolitan area, we find that three kinds of communities are involved:

- 1 The regional community, which embraces many municipal communities and is, therefore, a family of communities;
- 2 The village, county or city community;
- 3 The neighborhood community.

Only the second of these groups has any political framework, although all three have an influence upon political life and development. While the neighborhood community has no political structure, it frequently has greater unity and coherence than are found in the village or city and is, therefore, of fundamental importance to society.

[...]

THE NEIGHBORHOOD UNIT

The above title is the name which, to facilitate discussion, has been given to the scheme of arrangement for a family-life community that has evolved as the main conclusion of this study. Our investigations showed that residential communities, when they meet the universal needs of family life, have similar parts performing similar functions. In the neighborhood unit system those parts have been put together as an organic whole. The scheme is put forward as the frame-work of a model community and not as a detailed plan. Its actual realization in an individual real-estate development requires the embodiment and garniture which can be given to it only by the planner, the architect, and the builder.

The underlying principle of the scheme is that an urban neighborhood should be regarded both as a unit of a larger whole and as a distinct entity in itself. For government, fire and police protection, and many other services, it depends upon the municipality. Its residents, for the most part, find their occupations outside of the neighborhood. To invest in bonds, attend the opera or visit the museum, perhaps even to buy a piano, they have to resort to the "downtown" district. But there are certain other facilities, functions or aspects which are strictly local and peculiar to a well-arranged residential community. They may be classified under four heads: (1) the elementary school, (2) small parks and playgrounds, (3) local shops, and (4) residential environment. Other neighborhood institutions and services are sometimes found, but these are practically universal.

Parents have a general interest in the public school system of the city, but they feel a particular concern regarding the school attended by their children. Similarly, they have a special interest in the playgrounds where their own and their neighbors' children spend so many formative hours. In regard to small stores, the main concern of householders is that they be accessible but not next to their own doors. They should also be concentrated and provide for varied requirements.

Under the term "residential environment" is included the quality of architecture, the layout of streets, the planting along curbs and in yards, the arrangement and set-back of buildings, and the relation of shops, filling stations and other commercial institutions to dwelling places – all the elements which go into the environment of a home and constitute its external atmosphere. The "character" of the district in which a person lives tells something about him. Since he chose it, ordinarily, it is an extension of his personality. One individual can do but little to create it. It is strictly a community product.

It is with the neighborhood itself, and not its relation to the city at large, that this study is concerned. If it is to be treated as an organic entity, then it logically follows that the first step in the conversion of unimproved acreage for residential purposes will be its division into unit areas, each one of which is suitable for a single neighborhood community. The next step consists in the planning of each unit so that adequate provision is made for the efficient operation of the four main neighborhood functions. The attainment of this major objective – as well as the securing of safety to pedestrians and the laying of the structural foundation for quality in environment – depends, according to our investigations, upon the observance of the following requirements:

Neighborhood-unit principles

- 1 *Size*. – A residential unit development should provide housing for that population for which one elementary school is ordinarily required, its actual area depending upon population density.
- 2 *Boundaries*. – The unit should be bounded on all sides by arterial streets, sufficiently wide to facilitate its by-passing by all through traffic.

- 3 *Open Spaces*. – A system of small parks and recreation spaces, planned to meet the needs of the particular neighborhood, should be provided.
- 4 *Institution Sites*. – Sites for the school and other institutions having service spheres coinciding with the limits of the unit should be suitably grouped about a central point or common area.
- 5 *Local Shops*. – One or more shopping districts, adequate for the population to be served, should be laid out in the circumference of the unit, preferably at traffic junctions and adjacent to similar districts of adjoining neighborhoods.
- 6 *Internal Street System*. – The unit should be provided with a special street system, each highway being proportioned to its probable traffic load, and the street net as a whole being designed to facilitate circulation within the unit and to discourage its use by through traffic.

[For] each of these principles [...], it is desirable [...] to obtain a clearer picture of them, and for that purpose a number of plans and diagrams in which they have been applied will now be presented.

Low-cost suburban development

Character of district

[The plan shown in Figure 1] is based upon an actual tract of land in the outskirts of the Borough of Queens. The section is as yet entirely open and exhibits a gently rolling terrain, partly wooded. So far, the only roads are of the country type, but they are destined some day to be main thoroughfares. There are no business or industrial establishments in the vicinity.

Population and housing

The lot subdivision provides 822 single-family houses, 236 double houses, 36 row houses and 147 apartment suites, accommodations for a total of 1,241 families. At the rate of 4.93 persons per family, this would mean a population of 6,125 and a school enrollment of 1,021 pupils. For the whole tract the average density would be 7.75 families per gross acre [Table 1].

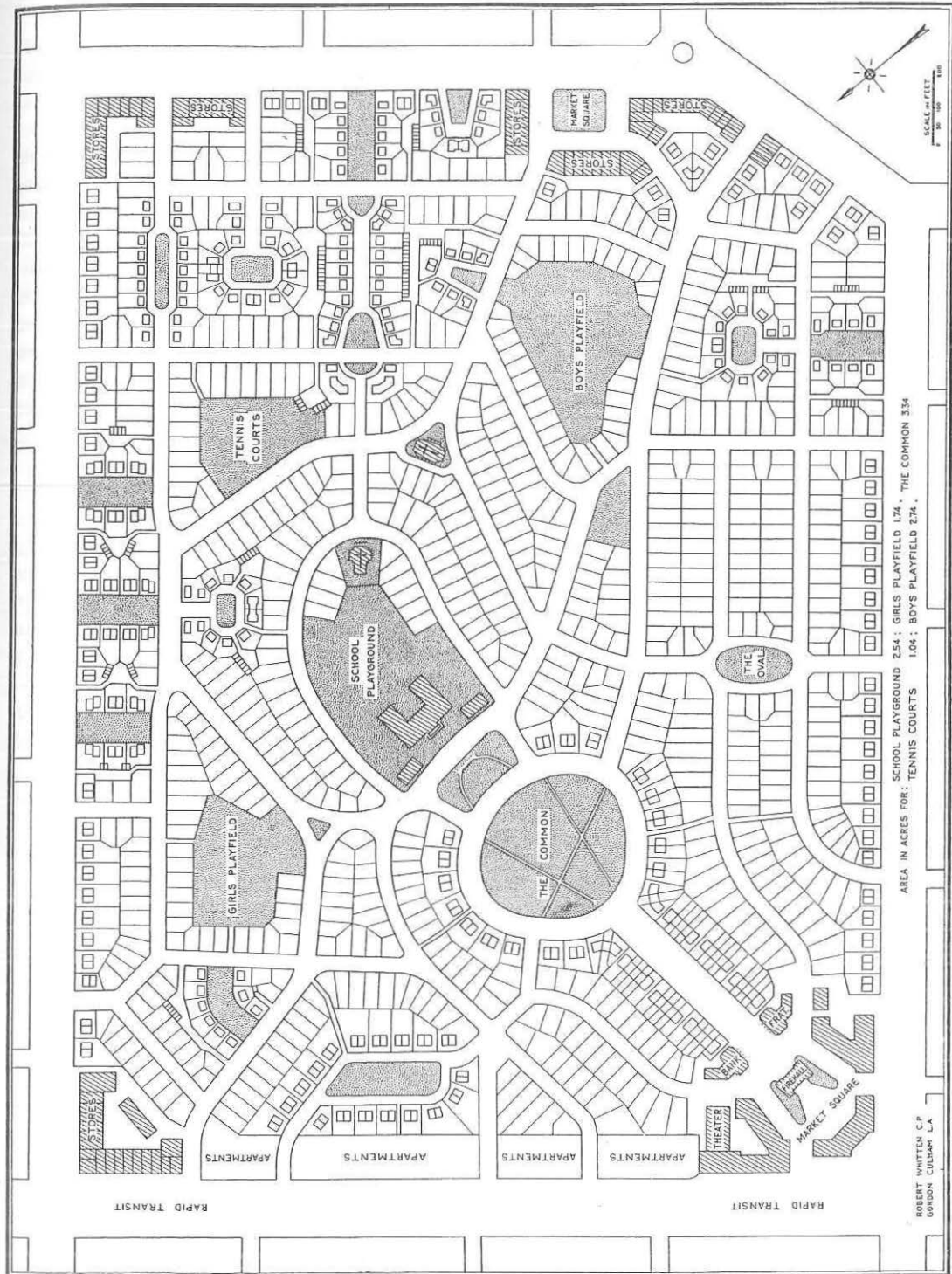


Figure 1 A subdivision for modest dwellings planned as a neighborhood unit.

Table 1 Low-cost suburban development: area relations of the plan depicted in Figure 1

<i>Complete unit</i>	<i>160 acres</i>	<i>100 percent</i>
Dwelling house lots	86.5	54.0
Apartment house lots	3.4	2.1
Business blocks	6.5	4.1
Market squares	1.2	0.8
School and church sites	1.6	1.0
Parks and playgrounds	13.8	8.6
Greens and circles	3.2	2.0
Streets	43.8	27.4

Open spaces

The parks, playgrounds, small greens and circles in the tract total 17 acres, or 10.6 percent of the total area. If there is included also the 1.2 acres of market squares, the total acreage of open space is 18.2 acres. The largest of these spaces is the common of 3.3 acres.

This serves both as a park and as a setting or approach to the school building. Back of the school is the main playground for the small children, of 2.54 acres, and near it is the girls' playfield of 1.74 acres. On the opposite side of the schoolyard, a little farther away, is the boys' playground of 2.7 acres. Space for tennis courts is located conveniently in another section of the district. At various other points are to be found parked ovals or small greens which give attractiveness to vistas and afford pleasing bits of landscaping for the surrounding homes.

Community center

The pivotal feature of the layout is the common, with the group of buildings, which face upon it. These consist of the schoolhouse and two lateral structures facing a small central plaza. One of these buildings might be devoted to a public library and the other to any suitable neighborhood purpose. Sites are provided for two churches, one adjoining the school playground and the other at a prominent street intersection. The school and its supporting buildings constitute a terminal vista for a parked main highway coming up from the market square. In both design and landscape treatment the

common and the central buildings constitute an interesting and significant neighborhood community center.

Shopping districts

Small shopping districts are located at each of the four corners of the development. The streets furnishing access to the stores are widened to provide for parking, and at the two more important points there are small market squares, which afford additional parking space and more opportunity for unloading space in the rear of the stores. The total area devoted to business blocks and market plazas amounts to 7.7 acres. The average business frontage per family provided by the plan is about 2.3 feet.

Street system

In carrying out the unit principle, the boundary streets have been made sufficiently wide to serve as main traffic arteries. One of the bounding streets is 160 feet wide, and the other three have widths of 120 feet. Each of these arterial highways is provided with a central roadway for through traffic and two service roadways for local traffic separated by planting strips. One-half of the area of the boundary streets is contributed by the development. This amounts to 15.3 acres, or 9.5 percent of the total area, which is a much larger contribution to general traffic facilities than is ordinarily made by the commercial subdivision, but not greater than that which is required by present-day traffic needs. The interior streets are generally 40 or 50 feet in width and are adequate for the amount of traffic, which will be developed in a neighborhood of this single-family density. By the careful design of blocks, the area devoted to streets is rather lower than is usually found in a standard gridiron subdivision. If the bounding streets were not over 50 feet wide, the percent of the total street area would be reduced from the 27.4 percent to about 22 percent. It will be observed that most of the streets opening on the boundary thoroughfares are not opposite similar openings in the adjacent developments. There are no streets which run clear through the development without being interrupted.

A neighborhood unit for an industrial section

[Figure 2] is presented as a sketch of the kind of layout which might be devised for a district in the vicinity of factories and railways [see Table 2]. Many cities possess somewhat central areas of this character, which have not been pre-empted by business or industry but which are unsuitable for high-cost housing and too valuable for a low-cost development entirely of single-family dwellings.

Economically, the only alternative use for such a section is industrial. If it were built up with factories, however, the non-residential area thereabouts would be increased and the daily travel distance of many workers would be lengthened. One of the main objectives of good city planning is therefore attained when it is made available for homes.

Along the northern boundary of the tract illustrated lie extensive railroad yards, while its southern side borders one of the city's main arteries, affording both an elevated railway and wide roadbeds for surface traffic. An elevated station is located at a point opposite the center of the southern limit, making that spot the main portal of the development.

Table 2 A neighborhood unit for an industrial section — distribution of area in Figure 2

Complete unit	101.4 acres	100 percent
Residences: houses	37.8	37.3
Residences: apartments	8.4	8.3
Parks and play spaces*	10.8	10.6
Business	5.2	5.1
Warehouses	3.2	3.2
Streets	36.0	35.5

* This aggregate of open spaces includes the sites for school and churches. When these are deducted there will still be something more than one acre per 1,000 residents. Of course, in this and the three other illustrative schemes, the provisions for open space are intended to suggest only what should be sought for in neighborhood subdivisions or developments. It is assumed in each case that elsewhere there will be provided additional land for large parks and athletic fields, bringing the combined park and recreation area of the city, as a whole, up to three acres per thousand population, or one acre for about every 300 persons. This is in conformity with the standard set forth in "Public Recreation," *Regional Survey*, Vol. V, page 132.

The functional dispositions

The above features dictated the employment of a tree-like design for the street system. Its trunk rests upon the elevated station, passes through the main business district, and terminates at the community center. Branches, covering all sections of the unit, facilitate easy access to the school, to the main street stem, and to the business district.

Along the northern border, structures suitable for light industry, garages, or warehouses have been designated. These are to serve as a buffer both for the noises and the sights of the railway yards. Next to them, separated only by a narrow service street, is a row of apartments, whose main outlooks will all be directed toward the interior of the unit and its parked open spaces.

The apartments are assigned to sites at the sides of the unit that they may serve as conspicuous visible boundaries and enable the widest possible utilization of the attractive vistas which should be provided by the interior features — the ecclesiastical architecture around the civic center and the park-like open spaces.

Housing density

The above diagram is intended to suggest mainly an arrangement of the various elements of a neighborhood and is not offered as a finished plan. The street layout is based upon a housing scheme providing for 2,000 families, of which 68 percent are allotted to houses, some semi-detached and some in rows; and 32 percent to apartments averaging 800 square feet of ground area per suite. On the basis of 4.5 persons in houses and 4.2 in suites, the total population would be around 8,800 people and there would be some 1,400 children of elementary school age, a fine enrolment for a regulation city school. The average net ground area per family amounts to 1,003.7 square feet. If the parks and play areas are included, this figure becomes 1,216 square feet.

Recreation spaces

These consist of a large schoolyard and two playgrounds suitable for the younger children, grounds

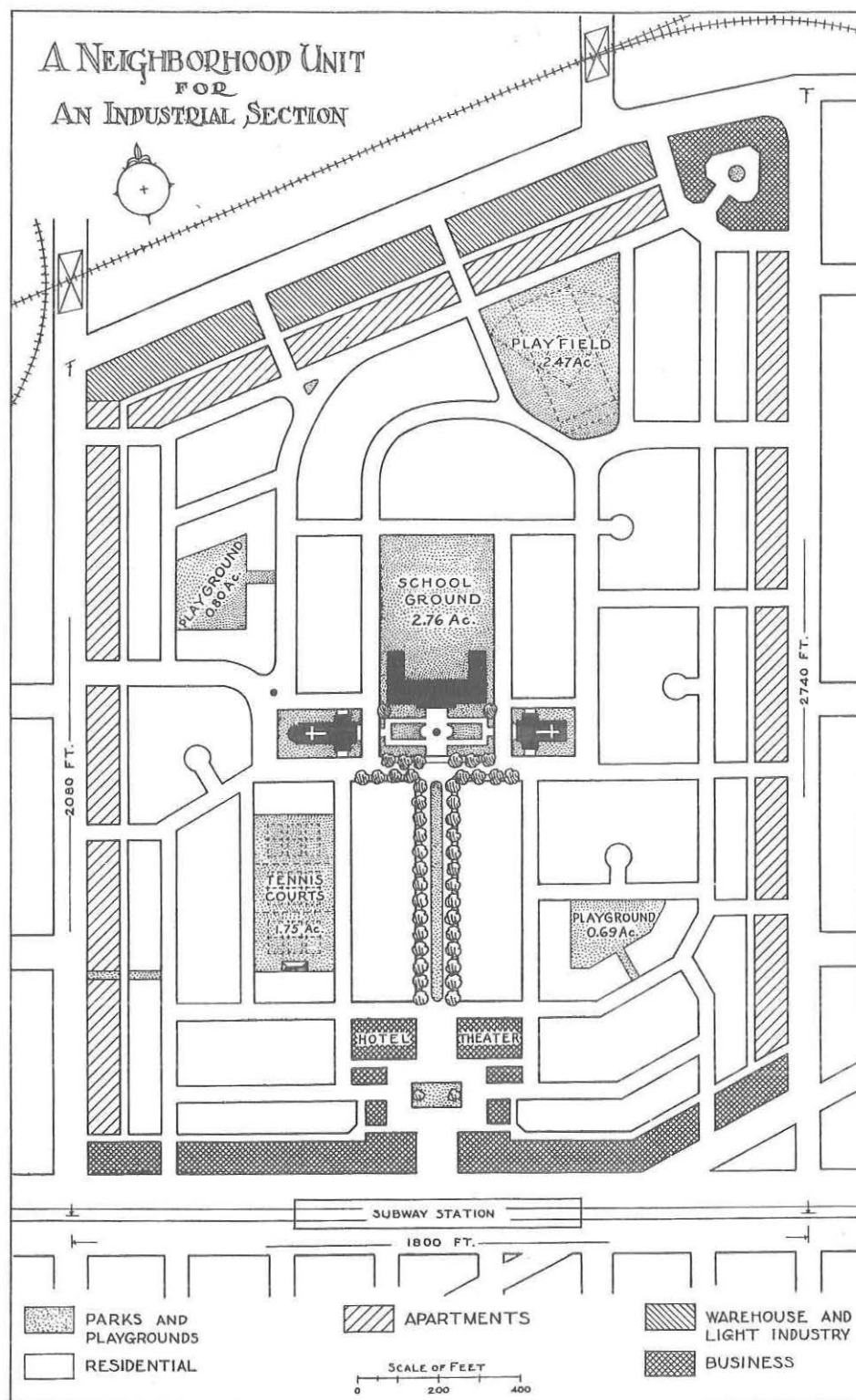


Figure 2 Diagram illustrating the kind of layout that might be used for a neighborhood in an industrial area.

accommodating nine tennis courts, and a playfield adapted either for baseball or soccer football. In distributing these spaces regard was had both to convenience and to their usefulness as open spaces and vistas for the adjacent homes. All should have planting around the edges, and most of them could be seeded, thus avoiding the barren aspect so common to city playgrounds.

Community center

The educational, religious and civic life of the community is provided for by a group of structures, centrally located and disposed so as to furnish an attractive vista for the trunk street and a pivotal point for the whole layout. A capacious school is flanked by two churches, and all face upon a small square which might be embellished with a monument, fountain, or other ornamental feature. The auditorium, gymnasium, and library of the school, as well as certain other rooms, could be used for civic, cultural and recreational activities of the neighborhood. With such an equipment and an environment possessing so much of interest and service to all the residents, a vigorous local consciousness would be bound to arise and find expression in all sorts of agreeable and useful face-to-face associations.

Shopping districts

The most important business area is, of course, around the main portal and along the southern arterial highway. For greater convenience and increased exposures a small market square has been introduced. Here would be the natural place for a motion-picture theatre, a hotel, and such services as a branch post office and a fire-engine house. Another and smaller shopping district has been placed at the northeast corner to serve the needs of the homes in that section.

Economic aspects

While this development is adapted to families of moderate means, comprehensive planning makes possible an intensive and profitable use

of the land without the usual loss of a comfortable and attractive living environment. The back and side yards may be smaller, but pleasing outlooks and play spaces are still provided. They belong to all the families in common and the unit scheme preserves them for the exclusive use of the residents.

While this is primarily a housing scheme, it saves and utilizes for its own purposes that large unearned increment, in business and industrial values, which rises naturally out of the mere aggregation of so many people. The community creates that value and while it may apparently be absorbed by the management, nevertheless, some of it goes to the individual householder through the improved home and environment which a corporation, having that value in prospect, is able to offer.

The percentage of area devoted to streets (35.5) is higher than is usually required in a neighborhood unit scheme. In this case the proportion is boosted by the generous parking space provided in the market square and by the adjoining 200-foot boulevard, one-half of whose area is included in this calculation. Ordinarily the unit scheme makes possible a saving in street area that is almost, if not quite, equal to the land devoted to open spaces. The school and church sites need not be dedicated. They may simply be reserved and so marked in the advertising matter with full confidence that local community needs and sentiment will bring about their ultimate purchase by the proper bodies. If either or both of the church sites should not be taken, their very location will ensure their eventual appropriation for some public, or semi-public, use.

Apartment house unit

Population

On the basis of five-story and basement buildings and allowing 1,320 square feet per suite, this plan would accommodate 2,381 families. Counting 4.2 persons per family, the total population would number 10,000 individuals, of whom about 1,600 would probably be of elementary school age, a number which could be nicely accommodated in a modern elementary school.

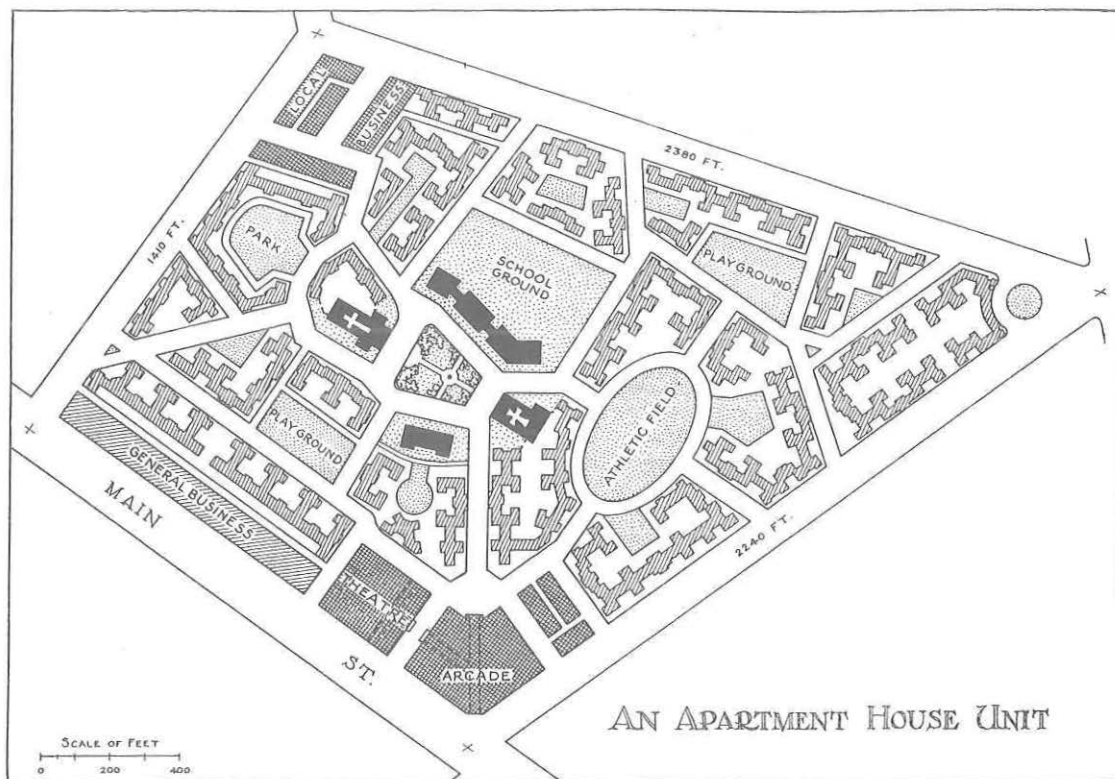


Figure 3 Diagram illustrating the kind of layout that might be used for an apartment house neighborhood.

Table 3 Apartment house unit – distribution of the area depicted in Figure 3

Complete unit	75.7 acres	100 percent
Apartment buildings	12.0	15.9
Apartment yards	21.3	28.0
Parks and playgrounds	10.4	13.8
Streets	25.3	33.4
Local business	4.9	6.5
General business	1.8	2.4

Environment

The general locality is that section where downtown business establishments and residences begin to merge. One side of the unit faces on the principal street of the city and this would be devoted to general business concerns. A theatre and a business block, penetrated by an arcade, would serve both the residents of the unit and the general public.

Street system

The unit is bounded by wide streets, while its interior system is broken up into shorter highways that give easy circulation within the unit but do not run uninterruptedly through it. In general they converge upon the community center. Their widths are varied to fit probable traffic loads and parking needs.

Open spaces

The land devoted to parks and playgrounds averages over one acre per 1,000 persons. If the space in apartment yards is also counted, this average amounts to 3.17 acres per 1,000 persons. The distribution is [shown in Table 4].

For 1,600 children the space in the school yard provides an average of 89 square feet per pupil, which is a fair allowance considering that all the pupils will seldom be in the yard at the same time.

Table 4 Apartment house unit – area of open spaces depicted in Figure 3

<i>Kind</i>	<i>Acres</i>
School grounds	3.27
Athletic field	1.85
Common	0.81
Park	0.61
Playground	1.03
Playground	0.81
Circle	0.18
Small greens	1.86
Total	10.42

The athletic field is large enough for baseball in the spring and summer, and football in the fall. By flooding it with a hose in the winter time it can be made available for skating.

On the smaller playground it will be possible, if desired, to mark off six tennis courts. The bottle-neck park is partly enclosed by a group of apartments, but it is also accessible to the residents in general.

The recreation spaces should be seeded and have planting around the edges, thus adding attractiveness to the vistas from the surrounding apartments.

Community center

Around a small common are grouped a school, two churches, and a public building. The last might be a branch public library, a museum, a "little theatre," or a fraternal building. In any case it should be devoted to a local community use.

The common may exhibit some kind of formal treatment in which a monument and perhaps a band-stand may be elements of the design. The situation is one that calls for embellishment, by means of both architecture and landscaping, and such a treatment would contribute greatly to local pride and the attractiveness of the development. The ground plan of the school indicates a type in which the auditorium, the gymnasium and the classrooms are in separate buildings, connected by corridors. This arrangement greatly facilitates the use of the school plant by the public in general and

permits, at the same time, an efficient utilization of the buildings for instruction purposes.

Apartment pattern

The layout of the apartment structures follows quite closely an actual design employed by Mr. Andrew J. Thomas for a group of "garden apartments" now being constructed for Mr. John D. Rockefeller, Jr., in New York City. The suites are of four, five, six and seven rooms and, in the case of the larger ones, two bath-rooms. Light comes in three sides of a room as a rule and, in some cases, from four sides. All rooms enjoy cross-ventilation.

In the Rockefeller plan every apartment looks out upon a central garden, which is ornamented with a Japanese rookery and a foot-bridge over running water. The walks are to be lined with shrubbery and the general effect will be park-like and refreshing.

Similar treatments could be given to the various interior spaces of the unit layout. Here, however, due to the short and irregular streets and the odd positions of the buildings, the charm of a given court would be greatly extended because, in many cases, it would constitute a part of the view of not merely one, but several, apartments.

Five-block apartment house unit

Locality

The plan shown in [Figure 4] is put forward as a suggestion of the type of treatment which might be given to central residential areas of high land values destined for rebuilding because of deterioration or the sweep of a real estate movement [see Table 5]. The blocks chosen for the ground site are 200 feet wide and 670 feet long, a length which is found in several sections on Manhattan. In this plan, which borders a river, two streets are closed and two are carried through the development as covered roadways under terraced central courts.

Ground plan

The dimensions of the plot between the boundary streets are 650 feet by 1,200 feet, and the total area

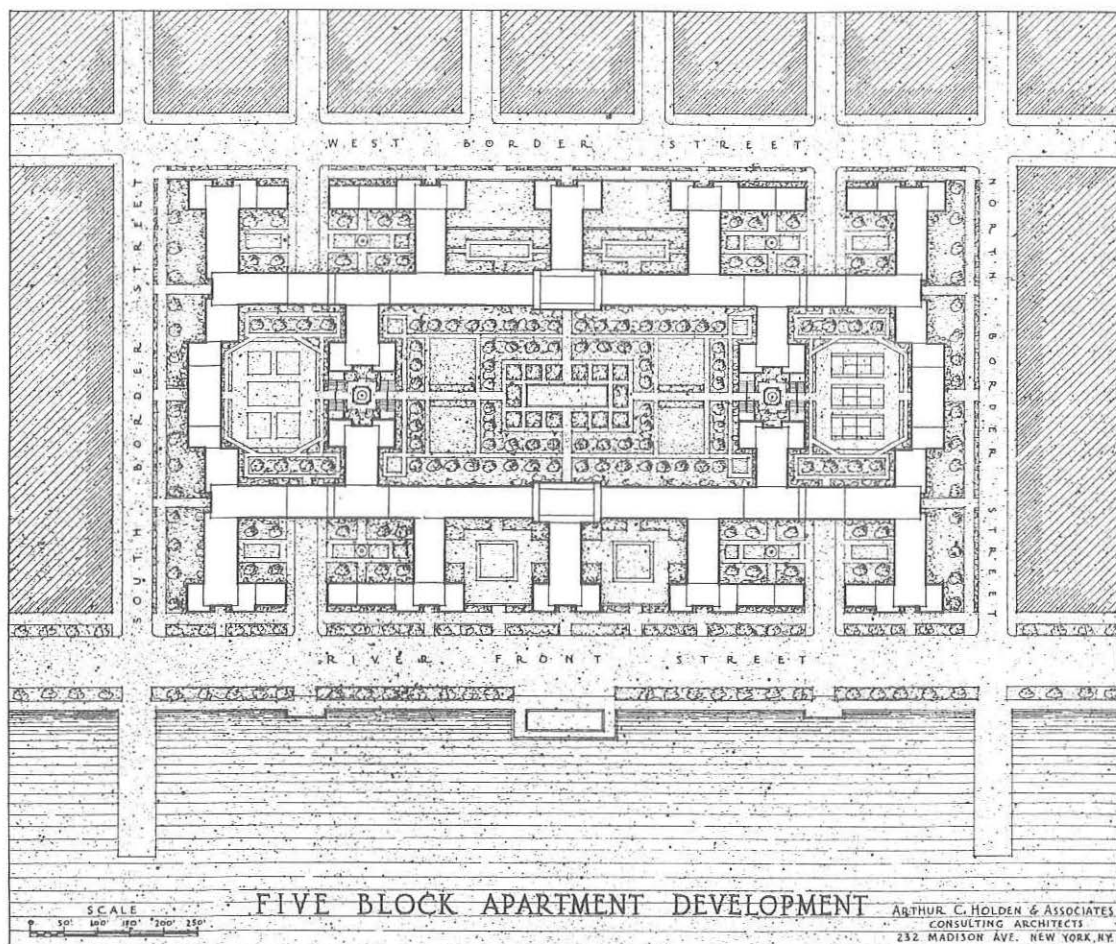


Figure 4 Diagram illustrating a five-block apartment unit that might be used to rebuild residential areas in central areas that have suffered deterioration.

Table 5 Five-block apartment house unit: area relations depicted in Figure 4

Five blocks and four cross streets	19.07 acres
Two cross streets taken	8,000 sq. ft.
Given to boundary streets	50,800 sq. ft.
Area of set-backs	39,000 sq. ft.
Land developed	16.4 acres
Covered by buildings	6.5 acres
Coverage	40.0 percent
Three central courts	5.3 acres

is approximately 16 acres. The building lines are set back from the streets 30 feet on the northern and southern boundaries. Both of the end streets, which were originally 60 feet, have been widened to 80 feet, the two 20-foot extra strips being taken out of the area of the development. The western boundary has been enlarged from 80 to 100 feet. The area given to street widening and to building set-back amounts to 89,800 square feet, or 11,800 square feet more than the area of the two streets which were appropriated.

It will be observed that the plan of buildings encloses 53 percent of the total area devoted to open space in the form of central courts. The main central court is about the size of Gramercy Park,

Manhattan, with its surrounding streets. Since this area would receive an unusual amount of sunlight, it would be susceptible to the finest sort of landscape and formal garden treatment.

Both of the end courts are on a level 20 feet higher than the central space and cover the two streets which are carried through the development. Underneath these courts are the service areas for the buildings. At one end of the central space there is room for tennis courts and, at the other, a children's playground of nearly one acre. By reason of the large open spaces and the arrangement of the buildings, the plan achieves an unusual standard as to light in that there is no habitable room that has an exposure to sunlight of less than 45 degrees. The width of all the structures is 50 feet, so that apartments of two-room depth are possible throughout the building, while the western central rib, being 130 feet from a 100-foot street, will never have its light unduly shut off by buildings on the adjacent blocks.

Accommodations

The capacity of the buildings is about 1,000 families, with suites ranging from three to fourteen rooms in size, the majority of them suitable for family occup-

ancy. In addition there would be room for a hotel for transients, an elementary school, an auditorium, a gymnasium, a swimming pool, handball courts, locker rooms and other athletic facilities. The first floors of certain buildings on one or more sides of the unit could be devoted to shops. The auditorium could be suitable for motion pictures, lectures, little-theatre performances, public meetings, and possibly for public worship. Dances could be easily held in the gymnasium. In the basement there might be squash courts.

Height

The buildings range in height from two and three stories on the boundary streets to ten stories in the abutting ribs, fifteen stories in the main central ribs, and thirty-three stories in the two towers. Many of the roofs could be given a garden-like treatment and thus contribute to the array of delightful prospects which are offered by the scheme.

This plan, though much more compact than the three others, nevertheless observes all of the unit principles. Neither the community center nor the shopping districts are conspicuous, but they are present. Children can play, attend school, and visit stores without crossing traffic ways.

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