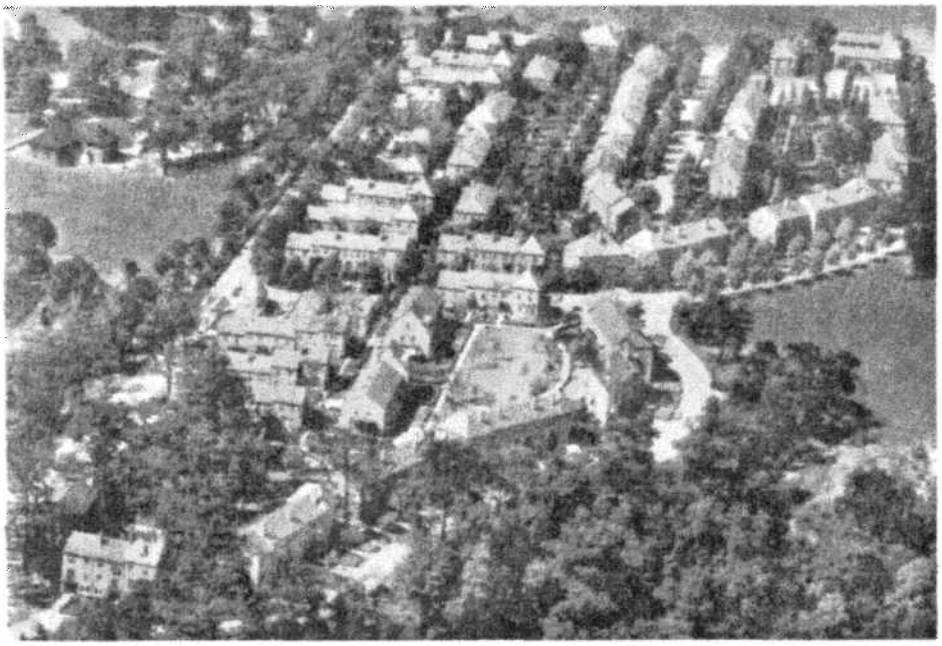


(far left) ***Aerial view (c. 1930) and Town Plan (c. 1928), Radburn, New Jersey.*** *Designed by RPAA planners Clarence S. Stein and Henry Wright as a satellite Garden City for New York City, Radburn was a radical departure from the typical American suburb. Innovations included the use of superblocks having a central swathe of open park land, the grouping of residences to face gardens and grounds and back on service courts, separate circulation networks for pedestrians and automobiles, and a hierarchy of streets to reduce construction costs and ensure safety. The new town was the embodiment of Clarence Perry's Neighborhood Unit, a model for community planning presented in the* Regional Survey of New York and Its Environs *(1929) and enthusiastically endorsed by the 1931 President's Conference on Home Building and Home Ownership. (Photo and plan courtesy Division of Rare & Manuscript Collections, Cornell University Library)*

(left) ***Aerial view (1943), Chatham Village, Pittsburgh.*** *An enduring model of American Garden City planning, Chatham Village (1932-1936) resulted from a careful study of economic conditions and the collaboration of local architects Ingrahm and Boyd, landscape architects Griswold and Kohankie, and advisors Stein and Wright. Developed as both a philanthropic venture and financial investment by the Buhl Foundation, the community received high acclaim for its integration of a large number of moderately-priced rental units with spacious grounds and woodland, the artistry of its Colonial Revival styling, and its accommodation of interconnected dwellings within a steeply sloping site. (Photo by Aerial Survey of Pittsburgh Inc., courtesy Pennsylvania Historical and Museum Commission)*

neighborhood was to consist of a superblock that was served by a circulation system that separated pedestrian and automobile traffic and instituted a hierarchy of roads to reduce construction costs and promote traffic safety. A variety of house types—detached, semi-detached, row, and apartment—was integrated into the design, as well as schools, recreational facilities, and a shopping center.

Each superblock was carefully designed with an interior park or green, which served as the backbone of the neighborhood with houses fronting on it and pedestrian walks running along its length. The superblocks, merged together to form a continuous swathe of park, and underpasses were to be introduced to allow pedestrians to pass beneath the motor roads, making it possible for children to walk to school without crossing streets. Narrow cul-de-sacs penetrated each superblock from perimeter feeder streets. Houses were oriented so that living rooms and bedrooms faced private gardens and the central green, while kitchens and garages faced cul-de-sacs that provided automobile access and functioned as short service courts. Radburn's hierarchy of roads not only afforded the benefits of safety and convenience, but also significantly reduced construction costs by limiting the amount of space occupied by streets and enabling the use of smaller water and sewer mains.[83]

A philanthropic venture of the Buhl Foundation begun in 1929, Chatham Village in Pittsburgh, Pennsylvania, further refined Garden City principles and made important aesthetic and functional advances in the design of low-to-moderate income, multiple family housing. The design resulted from the collaboration of Stein and Wright, who acted as site planners and project advisors, and a team of local architects, Charles T. Ingham and William T. Boyd, and landscape architects Ralph E. Griswold and Theodore Kohankie. The designers utilized superblock planning, groups of connected dwellings efficiently adjusted to the steeply sloping site, and landscaped garden courts that blended with natural ravines and woodland that surrounded the community on three sides. The project represented the ultimate fusion of Garden City planning and Colonial Revival design and received international acclaim as a highly successful model of Garden City planning. It served as an enduring model for large-scale, FHA-insured rental communities in the 1930s and 1940s.[84]

The Neighborhood Unit and the 1931 President's Conference

Radburn exemplified the Neighborhood Unit Formula, developed by Clarence Perry of the Russell Sage Foundation, and incorporated in Volume 7, "Neighborhood and Community Planning," of the 1929 *Regional Survey of New York and Its Environs.* Perry's formula called for the creation of communities large enough to support an elementary school, preferably about 160 acres with ten percent reserved for recreation and park space. Interior streets were to be no wider than required for their use with cul-de-sacs and side streets being relatively narrow. Community facilities were to be centrally located, and a shopping

district was to be located on the edge of the community where neighborhood streets joined the main arterials. Perry's concept was overwhelmingly endorsed at the 1931 President's Conference and laid a solid foundation for the development of FHA standards in the 1930s.[85]

The recommendations of the 1931 President's Conference for the design of residential neighborhoods reflected widespread acceptance of the idea of community planning and Perry's concept of the self-contained neighborhood unit. Mention was made of the advances made in the 1920s, and Radburn was praised for "producing desirable homes with ample open spaces at reasonably low cost." Such planning served two purposes–the grouping of homes into "reasonably compact residential neighborhoods with spaciousness for health and recreation," and creating "sub-centers for industry" with the object of "lessening the density of congested centers." The report stated:

> Stability of investment in a home is best assured when the subdivision is a community or neighborhood unit, which is amply protected by deed restrictions that supplement the zoning regulations, developed by real estate dealers of proved ability, and in which there is a strong homes association permanently concerned with the welfare of the neighborhood.[86]

Location was to be selected for "good access, good setting, public services, schools, parks and neighborhood unity," and subdivision plats were to be developed by an experienced landscape engineer or site planner and were to follow a "balanced plan" that took advantage of "topography, sunlight, natural features, and all sensible engineering and landscape considerations."[87]

Streets were to be designed for safety and economy and drawn at varying widths depending on the required setbacks, with deeper setbacks allowing for narrower streets. For example, a 60-foot width allowed for a 26-foot roadway and a sidewalk of four to six feet. The size and shape of lots were to be determined by the proposed type of housing, with the width of each lot depending on the size and character of the buildings, cost of the land, community tradition, and potential home owner. The use of longer blocks with fewer cross streets and the subdivision of land into wide, shallow lots were encouraged, departing from previous practices. Homes were to be "located upon narrow winding streets away from the noise and dangers of traffic" and to have proper orientation for sunlight.[88]

Spaciousness was upheld as a "primary principle in good subdivision layout." The ideal neighborhood was described as one protected by proper zoning regulations, where trees and the natural beauty of the landscape were preserved, and where streets were gently curving and adjusted to the contour of the ground. Open space was viewed as one of the most important considerations for home ownership. It could be achieved in three ways: (1) by subdividing into large lots, (2) by reserving large open areas in the interior of blocks, or (3) by creating parks, playgrounds, or large private spaces nearby.[89]

FHA Principles for Neighborhood Planning

The National Housing Act of 1934 created the Federal Housing Administration to restructure the collapsed private home financing system and stimulate private investment in housing. It called for the development of housing standards, a process for real estate appraisal, and a comprehensive program of review for approving subdivisions for mortgage insurance.

Neighborhoods of Small Houses

FHA's Land Planning Division under Seward H. Mott, an experienced site planner, was responsible for establishing principles for neighborhood planning and for reviewing subdivision plans submitted by developers seeking FHA approval. This approval would not only enable developers to secure private financing but would also make low-cost mortgages available for prospective home owners. Mott's staff translated many of the prevailing ideas about neighborhood design that had been endorsed by the 1931 President's Conference, including Perry's Neighborhood Unit Formula, into written standards and basic design principles that could be uniformly applied across the Nation to the design of neighborhoods of small houses. Between 1936 and 1940, FHA published standards and recommended designs in a series of circulars, including *Subdivision Development, Planning Neighborhoods for Small Houses, Planning Profitable Neighborhoods,* and *Successful Subdivisions.*[90]

The FHA set forth seven minimum requirements for new subdivisions:

1. Location exhibiting a healthy and active demand for homes.
2. Location possessing a suitable site in terms of topography, soil condition, tree cover, and absence of hazards such as flood, fog, smoke, obnoxious odors, etc.
3. Accessibility by means of public transportation (streetcars and buses) and adequate highways to schools, employment, and shopping centers.
4. Installation of appropriate utilities and street improvements (meeting city or county specifications), and carefully related to needs of the development.
5. Compliance with city, county or regional plans and regulations, particularly local zoning and subdivision regulations to ensure that the neighborhood will become stable (and real estate values as well.)
6. Protection of values through "appropriate" deed restrictions (including setbacks, lot sizes, minimum costs of construction).
7. Guarantee of a sound financial set up, whereby subdividers were financially able to carry through their sales and development program, and where taxes and assessments were in line with the type of development contemplated and likely to remain stable.

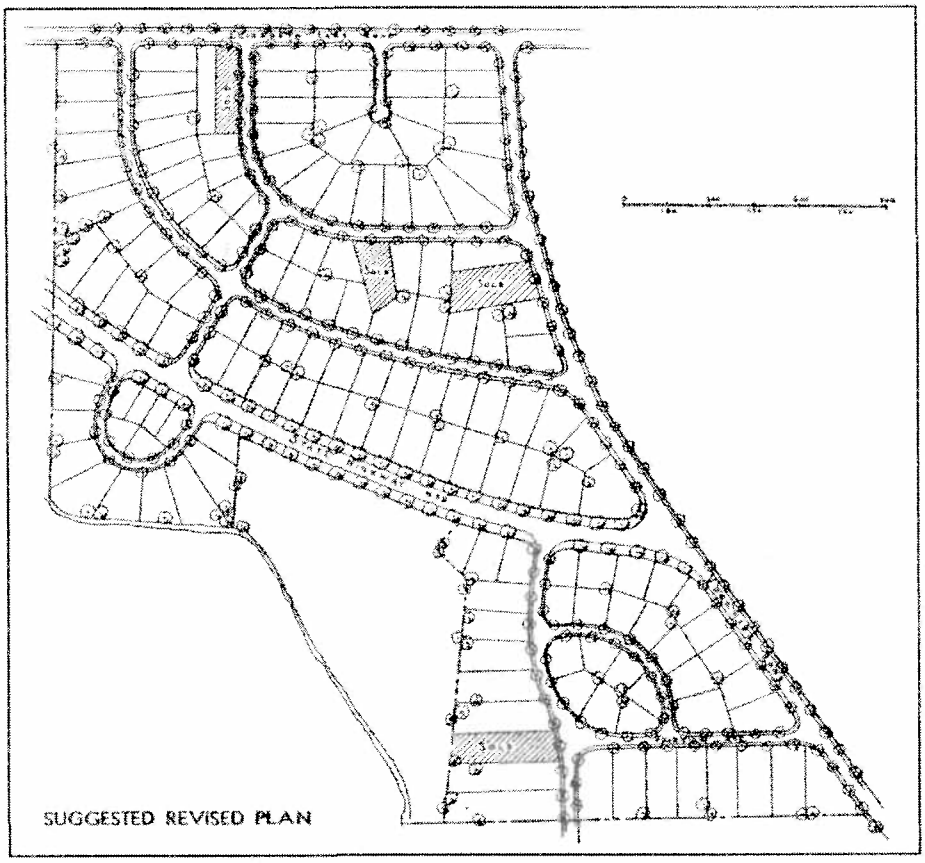
In addition, FHA issued a set of "desirable standards," which, although not strict requirements, were additional factors that influenced the approval of a project.

- Careful adaptation of subdivision layout to topography and to natural features
- Adjustment of street plan and street widths and grades to best meet the traffic needs
- Elimination of sharp corners and dangerous intersections
- Long blocks that eliminated unnecessary streets
- Carefully studied lot plan with generous and well-shaped house sites
- Parks and playgrounds
- Establishment of community organizations of property owners
- Incorporation of features that add to the privacy and attractiveness of the community.[91]

In 1936, FHA published *Planning Neighborhoods for Small Houses* as "a subdivision primer" setting forth standards for the design of new subdivisions that provided safe, livable neighborhoods and ensured stable real estate conditions that justified mortgage lending and FHA mortgage insurance. The FHA encouraged large-scale operations, where development was financed and carried out under the direction of an "operative builder" who arranged for the purchase of land, the design of the subdivision plat, and the design and construction of the houses. Such large-scale operations offered a "broader and more profitable use of capital" and permitted the introduction of "industrial methods that resulted in savings in overhead, construction, and merchandising costs." Developers were able to develop neighborhood plans in a consistent and harmonious manner, and in addition develop "commercial services such as retail stores and gasoline stations necessary to the life of the new community."[92]

To Seward Mott, who headed FHA's Land Planning Division, the legislation's mandate provided an opportunity to redirect the design of suburban America and to create conditions that would force public officials and planners alike to adopt planning measures and to abandon the rectilinear grid in favor of plans of curvilinear streets. Curvilinear plans had many advantages when compared to rectilinear gridiron plans: they provided greater privacy and visual interest; could be adapted to greater variations in topography; reduced the cost of utilities and road construction; and, by eliminating the need for dangerous four-way intersections, provided a safer environment for domestic activities.[93]

The curvilinear layouts recommended by FHA in the 1930s set the standards for the design of post-World War II subdivisions. They evolved from Garden City suburbs such as Seaside Village and Radburn, and the organic curvilinear designs of the nineteenth-century Picturesque suburbs. Highly influential were Olmsted and Vaux's Riverside, with its spacious plan of undulating and recessed, curvilinear streets, and Roland Park with its careful subdivision of land based on topography and the development of curvilinear streets that joined at oblique and acute angles and ended in cul-de-sacs in hollows or on hillside knolls. By the 1930s, such principles of design had been absorbed into the mainstream practices of the landscape architectural profession.



FHA redesigned plan for a subdivision near Pontiac, Michigan, *from* Planning Profitable Neighborhoods *(1938). FHA's curvilinear plan featured irregularly shaped blocks of evenly-sized house lots and the integration of long, sweeping feeder streets punctuated by narrow courts, circles, and cul-de-sacs. Such plans discouraged through traffic, eliminated dangerous four-way intersections, and reduced the cost of constructing roads and utilities. (Plan courtesy Library of the U.S. Department of Housing and Urban Development)*

FHA-Approved Garden Apartment Communities

Through its Large-Scale Rental Housing Division in the 1930s, FHA became involved in the approval of

designs and the creation of standards for large-scale rental housing communities under Section 207 of the National Housing Act. Financed privately by insurance companies or others with large capital, or through public housing bonds issued by municipalities or affiliated agencies, such developments offered low-cost rents for middle-and low-income Americans while providing incentives to the private building industry. FHA mortgage insurance minimized the risk of investing for lenders. The program gained momentum in the mid-1930s when the market for single-family housing was still uncertain, and expanded in the 1940s when additional insurance was authorized for housing in critical defense areas and later veterans' housing. Rental housing developments, especially those with a sizeable number of units, could take advantage of the economies of large-scale production and the use of standardized components.

FHA architect Eugene Henry Klaber worked closely with operative builders, many of whom hired architects and landscape architects to ensure that approved projects were efficiently designed cost-wise, had a solid plan for management, and were likely to materialize into sound, long-term investments. Efficiency of design required that each housing community be built at a large enough scale to take advantage of the savings offered by superblock planning and the use of standardized materials and methods. Most of these communities incorporated two- and three-story, multiple family dwellings in a variety of floor plans, often having private entrances and sometimes intermingled

***1949 aerial view** (right) **and present day streetscape** (below), **Arapahoe Acres,** Englewood, Colorado. Built between 1949 and 1957, the 33-acre postwar subdivision reflects the vision of developer-architect Edward Hawkins and site planner-architect Eugene Sternberg for a community of moderately-priced small houses using modern principles of design. Breaking the ubiquitous grid of metropolitan Denver, the plan is distinctive for its curvilinear arrangement of streets, placement of houses on small uniformly sized lots to provide both views and privacy, and integration of landscape features, such as lawns, fences, hedges, shrubbery, and specimen trees, to organize space and give the landscape a flowing, sculptural quality. (Aerial photo courtesy of Clyde Mannon; streetscape by Diane Wray, courtesy Colorado Historical Society)*

with rowhouse or duplex units. A suburban location and neighborhood amenities further contributed to the stability of real estate values and protected the investment of lenders. In 1940, the FHA issued a series of "Architectural Bulletins," which provided economical and efficient designs for all aspects of multiple family house design, from the layout of kitchens to the planting of common areas.[94]

Many of the reforms and concerns for safety that the RPAA had introduced at Sunnyside, Radburn, and Chatham Village were carried over into the design of apartment communities. These included: the arrangement of housing units to afford privacy, sunlight, and fresh air; separation of internal pedestrian circulation from perimeter motor traffic; and provision of landscaped gardens and grounds away from the noise and activity of major arterial streets. Housing units in developments such as Colonial Village in Arlington, Virginia, were carefully arranged to fit the existing topography and designed to provide visual appeal, variety, and a village-like atmosphere.[95]

Such designs would provide attractive dwellings at a higher density and lower cost than neighborhoods of single family homes. To achieve the highest standards of safety and quiet, the standards for projects containing several hundred units called for the development of superblocks with garden courts, ample throughways with pedestrian underpasses and walkways, parking and garage compounds, centralized trash stations, and the elimination of service alleys. Clearance between buildings was carefully considered to provide adequate light, free circulation of air, and privacy. A maximum height of three stories was recommended unless elevators could be provided. Landscaping around foundations, common areas, and the circulation network, was recommended depending on rental costs and project's capitalization. In addition to playgrounds and common areas, larger developments included stores, recreation centers, and medical offices.[96]

The Postwar Curvilinear Subdivision

Through FHA's publication of standards for neighborhood planning and its comprehensive review and revision of subdivisions for mortgage approval, curvilinear subdivision design became the standard of both sound real estate practice and local planning. As FHA-backed mortgages supported more and more new residential development on the edge of American cities, local planning commissions adopted some form of the FHA standards as subdivision regulations. Thus, by the late 1940s, the curvilinear subdivision had evolved from the Olmsted, City Beautiful, and Garden City models to the FHA-approved standard, which had become the legally required form of new residential development in many localities in the United States. Based on the Garden City idea, the greenbelt communities built by the U.S. government under the Resettlement Administration during the New Deal became models of suburban planning, incorporating not only the Radburn Idea but also the FHA standards for neighborhood design.[97]

The curvilinear subdivision layout was further institutionalized as the building industry came to support national regulations that would standardize local building practices and reduce unexpected development costs. One of the most influential private organizations representing the building industry was the Urban Land Institute (ULI), established in 1936 as an independent nonprofit research organization dedicated to urban planning and land development. Sponsored by the National Association of Real Estate Boards (NAREB) and serving as a consultant to the National Association of Home Builders (NAHB), ULI provided information to developers about community developments that supported land-use planning and promoted the idea of metropolitan-wide coordination as an approach to development.[98]

In 1947 the ULI published its first edition of the *Community Builder's Handbook.* Providing detailed instructions for community development based on the curvilinear subdivision and neighborhood unit approach, it became a basic reference for the community development industry and, by 1990, was in its seventh edition. In 1950 the NAHB, the primary trade organization for the industry, published the *Home Builders' Manual for Land Development.*

Thus, by the late 1940s, the concept of neighborhood planning had become institutionalized in American planning practice. This form of development, in seamless repetition, would create the post-World War II suburban landscape.

THE DESIGN OF THE SUBURBAN HOME

The central motivation for the invention of the suburban house was the desire of Americans to own a single-family house in a semi-rural environment away from the city—what would become the American dream. Several factors influenced the evolution of suburban house design:

- The lowering of construction costs, accomplished with the invention of the balloon-frame method of construction in the 1830s and successive stages of standardization, mass production, and prefabrication.
- The translation of the suburban ideal into the form an individual dwelling usually on its own lot in a safe, healthy, and parklike setting.
- The design of an efficient floor plan believed to support and reinforce the ideal family.

The evolution of the American home reflects changing concepts of family life and the ideal suburban landscape. From 1838 to 1960, the design of the single-family, detached suburban home in a landscaped setting evolved in several broad stages from picturesque country villas to sprawling ranch houses on spacious suburban lots.

The Suburban Prerequisite: The Invention of the Balloon Frame

The widespread adoption of the balloon-frame method of construction, invented in Chicago in the 1830s, along with the invention of wire nails and the circular saw, transformed the character of American housing in the mid-nineteenth century. The lightweight balloon frame consisted of narrow wooden studs and larger joists arranged in a box-like configuration capable of absorbing load-bearing stresses. In comparison to traditional post-and-beam and masonry methods, balloon framing could be quickly assembled at a lower cost with fewer and less experienced workers. Allowing considerable freedom of design in both exterior massing and interior layout, it was well-suited for building homes in the Romantic Revival and Picturesque styles that were coming into vogue in the mid-nineteenth century.[99]

Rural Architecture and Home Grounds, 1838 to 1890

The suburban home first appeared as a rural villa for the fairly well-to-do family in the mid-nineteenth century. Located "on the edge of the city," it was intentionally designed as a therapeutic refuge from the city, offering tranquility, sunshine, spaciousness, verdure, and closeness to nature—qualities opposite those of city. This ideal was aggressively and persuasively articulated through pattern books, the writings of domestic reformers, and popular magazines. As house designs became adapted for more modest incomes and as advances in transportation lowered the cost of commuting, suburban living became affordable to an increasingly broad spectrum of the population.

Early Pattern Books

Alexander Jackson Davis's *Rural Residences* (1838) marked the transition from builders' guides, which focused on techniques of joinery and architectural detailing, to a new generation of pattern books. Pattern books were directed at the prospective home owner and featured plans and elevations for ornamented villas and cottages in a variety of romantic revival styles all set in a semi-rural, village setting. Catharine E. Beecher's *Treatise on Domestic Econ-omy* (1841) called for domestic reform, promoting the idea that rural living was ideally suited for family life, and offering elevations and floor plans for simple houses designed for efficiency and family comfort. With the publication of *Cottage Residences* (1842) and *Architecture of Country Houses* (1850), Andrew Jackson Downing soon after popularized a market for pattern books that offered a variety of house types and styles suited for country or village living.

Downing gave detailed architectural expression to the ideal of living in a semi-rural environment, offering designs for villas for the well-to-do and less expensive cottages for lower-income households. Through designs that conformed to a romantic aesthetic for the "beautiful" or the "picturesque," Downing promoted revival styles described as "Italianate," "Tudor Revival," "Bracketed," "Swiss," "Gothic Revival," and "Tuscan." His books also illustrated decorative architectural elements, such as brackets and vergeboards, that could be crafted by most country builders to embellish the simplest home.[100]

Pattern books appeared by a number of architects, including Calvert Vaux, A. J. Bicknell, George E. Woodward, Orson Squire Fowler, William H. Ranlett, and Gervase Wheeler. *Godey's Lady's Book*, a popular magazine, also offered its readers designs for rural villas and cottages, thereby establishing the important role of periodicals in fostering domestic reform and affecting popular taste.[101]

Landscape Gardening for Suburban Homes

Downing's *Treatise on the Theory and Practice of Landscape Gardening* (1841) was the first American published guide for laying out and planting domestic grounds. A nurseryman by trade, Downing fostered an avid interest in horticulture, encouraging home owners to enhance village streets and domestic grounds with plantings drawn from the vast numbers of native and exotic trees and shrubs becoming available in the United States. His books offered simple layouts, extensive

instructions, and plant lists for landscaping villas and cottages, often on modestly-sized rectangular parcels of land. To Downing, even the smallest domestic yard was a pleasure ground that offered a sense of enclosure and privacy from the outside world and could be developed with curvilinear paths, lawns, overlooks, tree plantations, specimen trees, and a variety of gardens.

Instructions and site plans for embellishing the grounds of suburban homes appeared regularly in a number of periodicals, including *The Horticulturalist*, *Hovey's Magazine of Horticulture*, and *Garden and Forest*. Between 1856 and 1870, plan books appeared by a number of other landscape gardeners, including Henry W. Cleaveland, Robert Morris Copeland, George E. and F. W. Woodward, and Jacob Weidenmann.[102]

Frank J. Scott was among the first to recognize that the new homes being built outside cities formed neighborhoods that were suburban, not rural, in character. His comprehensive landscape manual, *Art of Beautifying Suburban Home Grounds of Small Extent* (1870), was intended to help the middle-class home owner achieve beautiful landscape effects that were low in cost and easy to maintain, including graded lawns, ornamental trees and shrubs, and foundation plantings. His influence was extensive, and by the 1870s, suburban streets began to take on a unified landscape character with paved roads, shade trees, entry walks, fences, and stairways, giving definition to the ideal suburban landscape.[103]

Queen Anne cottage *(1904) in the Harrison Boulevard Historic District, Boise, Idaho, represents one of the city's modest "home-dwellings," typically built by local builders. The imaginative treatment of houses to face street corners and the presence of mature street trees reflect a vernacular expression of landscape design. (Photo by Duane Garrett, courtesy Idaho State Historic Preservation Office)*

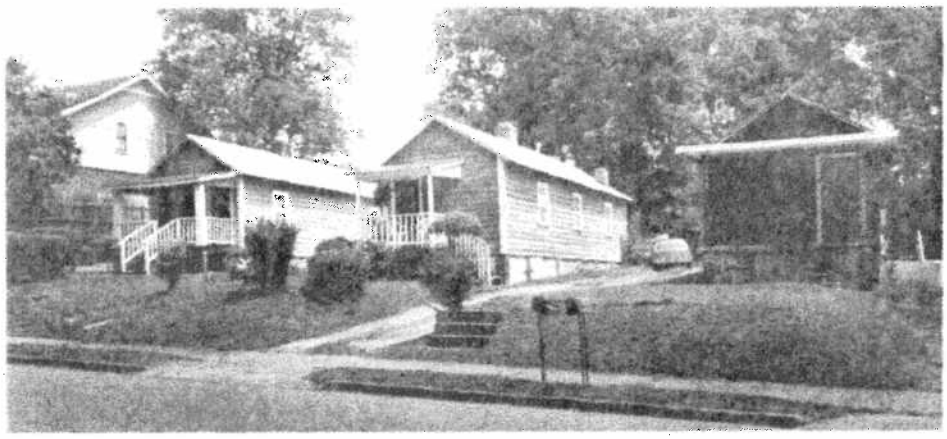
Eclectic House Designs and Mail Order Plans

After the Civil War, a new p ation of pattern books appeared of greater variety and comple n house design and plans well-suite suburban house lots. Henry Hud folly's *Modern Dwellings in Town ountry, Adapted to American Want Climate* (1878) was among the first t ocate architectural eclecticism in h visual and artistic effects—in the n of chimneys, gables, and por or example— became import pects of stylistic appeal. Such books popularized late nineteenth-century styles including the Shingle, Stick, Eastlake, Second Empire, and Queen Anne Revival styles.[104]

Mail order services further democratized home building and added variety and complexity to Victorian-era house design. *Model Homes for the People, A Complete Guide to the Proper and Economical Erection of Buildings* (1876) was the first in a series of best-selling, inexpensive catalogs by George and Charles Palmer which offered detailed architectural plans by mail for a small fee. The *Ladies' Home Journal*, under the editorship of Edward Bok beginning in 1889, and a host of catalogs by architects George F. Barber, Robert W. Shoppell, William A. Radford, and others similarly made available architect-designed plans for a nominal cost. This practice continued in the twentieth century, carried on by architect-sponsored small house service bureaus and stock plan companies, such as Garlinghouse of Topeka, Kansas.[105]

The Homestead Temple-House

Working-class families sought separation from the city and privacy from neighbors in modest, detached homes on the narrow, rectangular lots of gridiron subdivisions. By the 1860s, a free-standing house type, the "homestead temple-house," gained popularity in the rapidly growing industrial cities of the Northeast and Midwest. Derived from the earlier Greek Revival house and typically adorned by a stylish doorway or colonnaded porch, the house was turned so that the gabled end faced the



(above) ***A regional expression of the "homestead temple-house,"*** *the simple one-story shotgun houses (c. 1925) in the Rocksprings Shotgun Row Historic District were built to house African American laborers who settled in Athens, Georgia, following World War I. (Photo by James R. Lockhart, courtesy Georgia Department of Natural Resources)*

(far left) ***Gothic Revival house designed by James H. McGill*** *for LeDroit Park in Washington, DC, exemplifies the romantic revival designs promoted by mid-nineteenth-century pattern books, such as Andrew Jackson Downing's* Cottage Residences *(1842) and* The Architecture of Country Houses *(1850). Developed between 1873 and 1877, LeDroit Park was originally planned as an architecturally unified subdivision of detached and semi-detached houses, many designed by McGill, an enterprising architect who advertised his services through the publication of* LeDroit Park Illustrated *(1877) and* Architectural Advertiser *(1879). (Photo by Jack E. Boucher, courtesy Historic American Buildings Survey)*

(left) ***Brick row houses*** *(c. 1882) in Queen Anne style designed for working-class families (many immigrants from Germany and Ireland) in the William D. Bishop Cottage Development (c. 1840-1894), Bridgeport, Connecticut. Attributed to George and Charles Palliser, houses exhibit the eclecticism and complexity of design for which the architects became known through a series of inexpensive catalogs, such as* Model Homes for the People *(1876), which offered detailed architectural drawings that could be purchased by mail for a small fee. (Photo by D. Palmquist, courtesy Connecticut Historical Commission)*

street and the floor plan extended deeply into the lot.[106]

The popularity of this house type persisted throughout the nineteenth century, allowing working-class families to live in suburban neighborhoods close to railroad stations and later along streetcar routes. It appeared in several forms from a simple one-story, "shotgun" home in the South to the double- and triple-decker multiple family dwellings of the Northeast, this type assumed a variety of architectural styles ranging from Classical and Gothic Revivals to Italianate and Queen Anne Revival. The crowded and repetitious character of such neighborhoods would attract the criticism of twentieth-century reformers.

The Practical Suburban House, 1890 to 1920

The expansion of streetcar transportation in American cities coincided with fundamental changes in the perception of the ideal family and a revision of what constituted the best suburban home. Progressive ideals emphasizing simplicity and efficiency called for house designs that reflected less hierarchical relationships, technological innovations, and a more informal and relaxed lifestyle.[107]

New subdivisions provided utilities and amenities not available elsewhere. In many places, they benefitted from the street improvements, park and boulevard systems, and public utility systems that resulted from the City Beautiful movement and an emerging interest in city planning as the means for Progressive reform.

Technological innovations introduced to improve household life—central heating, gas hot water heaters, indoor plumbing, and electricity—entailed expensive mechanical systems that increased the cost of construction. The reduction of floor space and the use of standardized plans helped offset the rising cost of home construction and put home ownership within reach of more Americans. First appearing in the 1890s, the bungalow reflected the desire for an affordable single-family house for households without servants. These houses, and a somewhat large type known as the foursquare, were sold by catalog and became the first mass-produced houses in the United States.[108]

The Open Plan Bungalow

By 1910, the bungalow had become the ideal suburban home and was being built by the thousands, giving rise to what has been called the "bungalow suburb." The typical bungalow was a one- or one-and-a-half-story house having a wide, shallow-pitched roof with broad overhanging eaves. The interior featured an open floor plan for family activities at the front of the house and private bedrooms at the back or upstairs. The wide open front porch, a distinctive feature of the ideal bungalow, provided a transition between interior and outdoors.[109]

The design of the bungalow was influenced by the Prairie School movement of the Midwest, the California Arts and Crafts movement, and a number of vernacular housing types. Part of the bungalow's appeal was its adaptation of these and other architectural influences in the form of a small comfortable house. The suburban bungalow—in styles ranging from English Cottage styles to the Mission Revival style of the Southwest—was popularized nationwide by periodicals such as *Western Architect, Ladies' Home Journal, Craftsman,* and *Bungalow Magazine.* Numerous catalogs and books appeared, many in multiple editions, including William A. Radford's *Artistic Bungalows* (1908), Henry L. Wilson's *Bungalow Book* (1910), Henry H. Saylor's *Bungalow Book* (1911), H. V. Von Holst's *Modern American Homes* (1913), Gustav Stickley's *Craftsman Homes* (1909) and *More Craftsman Homes* (1912), and Charles E. White's *Bungalow Book* (1923).

The American Foursquare

The American foursquare made its appearance in the 1890s, and by the 1930s, was a fixture of American neighborhoods. A typical foursquare was a two-and-one-half-story house having a raised basement, one-story porch across the front, and plan of four evenly sized rooms on each floor. Often crowned with a pyramidal roof and dormers, the foursquare appeared in a variety of architectural styles, the most popular being the Colonial Revival.[110]

Factory Cut, Mail Order Houses

The availability of complete, factory cut homes, which could be ordered by mail from illustrated catalogs, was largely responsible for the widespread popularity of the bungalow and foursquare. The Hodgson Company of Dover, Massachusetts, was one of the first to market factory cut dwellings, sheds, and cottages. During the first decade of the twentieth century, several companies—Aladdin of Bay City, Michigan; Sears and Roebuck; and Montgomery Ward—began to market pre-cut homes that could be shipped by railroad and assembled on site. This trend grew in popularity and at the height of its popularity in the 1920s the industry included a host of other companies, including the Gordon-Van Tine Company of Davenport, Iowa, and Pacific Ready-Cut of Los Angeles.

The success of mail order home building depended on inexpensive transportation, vast selection of housing types and prices, financial arrangements where home owners could pay in installments, and marketing programs whereby designs were constantly being revised and retired as new ones reflecting changing popular taste were introduced. Thousands of pre-cut houses were sold and shipped annually. Sears alone offered approximately 450 ready-to-build designs ranging in style, type, and size from small bungalows to multiple family apartment houses. Sears's sales reached 30,000 by 1925 and nearly 50,000 by 1930.[111]

Introduction of the Garage

Shelter for the automobile became an increasingly important consideration after 1900. Driveways were readily accommodated in the progressive design of new neighborhoods having road improvements such as paved surfaces, gutters and curbs, and sidewalks. The earliest garages were placed behind the house at the end of a long driveway that often consisted of little more than

a double tract of pavement. By the end of the 1920s, attached and underground garages began to appear in stock plans for small homes as well as factory-built houses. Among the earliest homes with built-in garages were the detached and semi-detached models designed by architect Frederick Ackerman in 1928-1929 for Radburn, New Jersey. The design of an expandable two-story house with a built-in garage and additional upper-story bedroom was introduced by the FHA in 1940. By the 1950s, garages or carports were integrated into the design of many homes.[112]

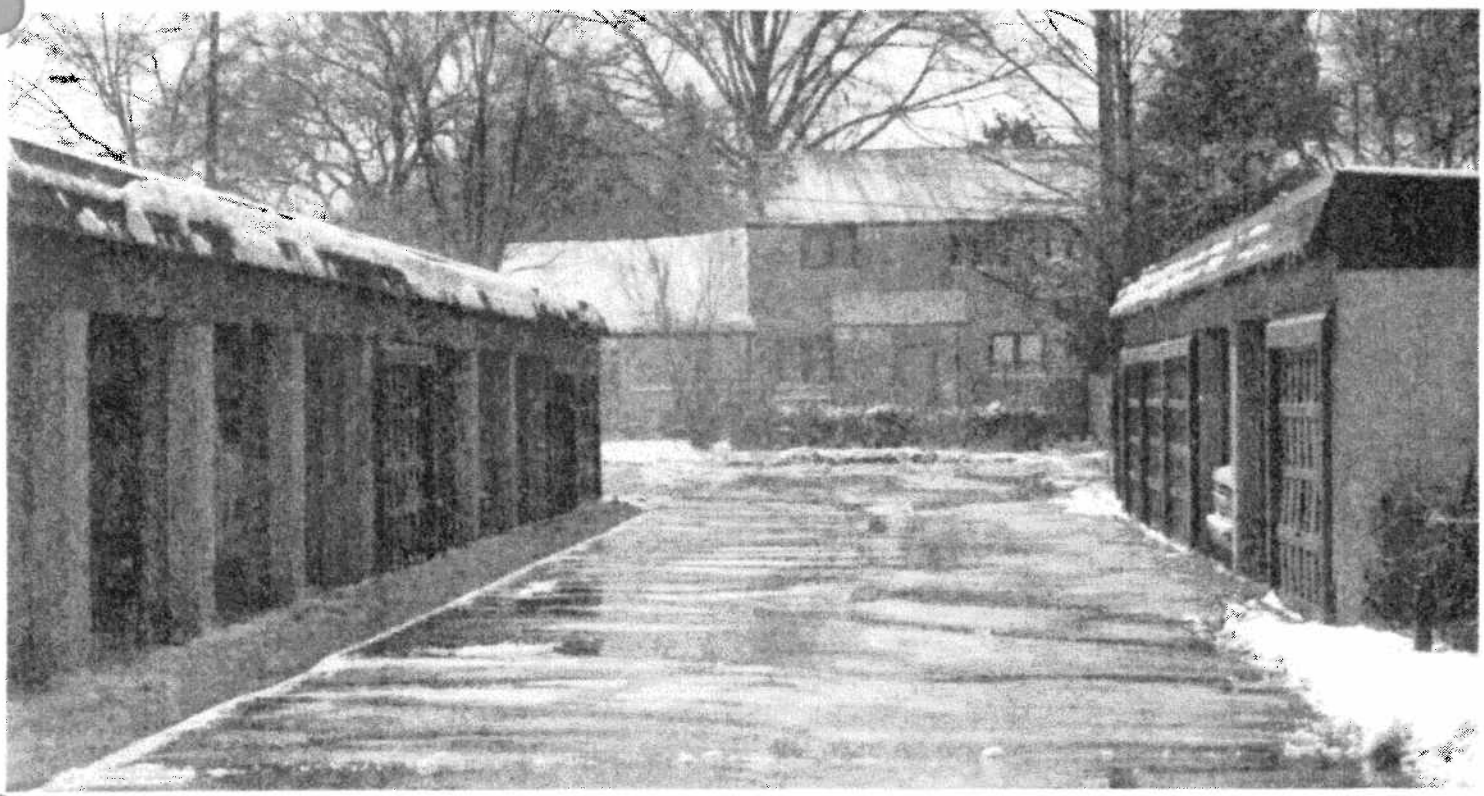
Keith's Magazine, Carpentry and Building, Building Age, and *American Carpenter and Builder* were among the first magazines to offer instructions for building garages. William A. Radford is credited with popularizing the term "garage" and introducing the first catalog devoted to the type in 1910. Manufacturers of pre-cut homes, such as Aladdin Homes, began to offer a variety of mail order garages, often matching the materials and styles of popular house types.[113]

Home Gardening and the Arts and Crafts Movement

The American Arts and Crafts movement spurred an avid interest among homeowners in gardening and a desire to integrate a home's interior space with its outdoor surroundings. To unify house and garden and integrate indoor and outdoor living, many bungalow designers used natural construction materials, incorporated porches and courtyards into their designs, and encouraged the arrangement of yards with simple terraces, rustic paths, and garden rooms. Periodicals such as *The Craftsman* featured articles for embellishing the grounds of bungalows with patios, gates, fountains, pools, arbors, pergolas, and rockery. Features such as hanging vines, water gardens, and creeping ground covers added to the variety and rich textures of the Arts and Crafts garden.

Books by landscape architects educated home owners about domestic yard design; these included Ruth B. Dean's *The Liveable House, Its Garden* (1917), Herbert J. Kellaway's *How to Lay Out Suburban Home Grounds* (1907 and 1915), Elsa Rehmann's *The Small Place: Its Landscape Architecture* (1918), and Grace Tabor's *Gardening Book* (1911), *Making the Grounds Attractive with Shrubbery* (1912), *Suburban Gardens* (1913), and *Planting Around the Bungalow* (1914). Plan books such as Eugene O. Murmann's *California Gardening* (1914) provided gardening advice, planting plans, and plant lists for home owners according to local climate and growing conditions.

Garden writing flourished in popular magazines, such as *Ladies' Home Journal, House and Garden, Country Life in America, House Beautiful, Garden Magazine,* and *Woman's Home Companion.* Garden columns—by Frances Duncan, Wilhelm T. Miller, and Grace



Compound garages *flanking a central service court accommodated automobiles in Greenbelt, Maryland, one of three planned Garden City communities built by the Federal Resettlement Administration during the New Deal. (Photo by Elizabeth Jo Lampl, courtesy National Historic Landmarks Survey, NPS)*

(right) ***A Monterey Revival house with garden of desert plants*** *in Tucson's Colonia Solana Historic District, which was platted in 1927 and developed with the expertise of landscape architect Stephen Child. Inspired by the native landscape, Child used naturalistically curving lines and native plants in his designs for both individual home grounds and neighborhood streets. (Photo by Larry Wilson, courtesy Arizona Office of Historic Preservation)*

(bottom) ***Present day view across one of Radburn's interior parks*** *illustrates mature plantings of native trees and shrubs designed in the late 1920s by landscape architect Marjorie Sewell Cautley and homes in the popular revival styles of the period by "small house" architect Frederick Ackerman. Stein and Wright's vision for a garden city called for the integration of landscape and architecture into a unified design and required the collaboration of designers having special areas of expertise. (Photo by Paula Reed, courtesy National Historic Landmarks Survey, NPS)*

Tabor—and articles by noted designers, nursery keepers, and amateur gardeners, showcased successful gardens, provided horticultural information, and offered gardening advice.[114]

Horticulturalist Liberty Hyde Bailey of Cornell University bridged the gap between science and practical landscape gardening. As editor of *Country Life in America* and author of *Garden-Making: Suggestions for the Utilizing of Home Grounds* (1898) and *The Practical Garden Book* (1904), he translated his extensive botanical knowledge into simple principles for suburban gardeners.[115]

With the publication of Helena Rutherford Ely's *A Woman's Hardy Garden* in 1903, Victorian practices of carpet bedding and lush displays of exotic plantings gave way to simpler gardens featuring harmonies of color, seasonal changes, and perennial displays. Numerous books by successful amateur gardeners followed including, Louise Shelton's *The Seasons in a Flower Garden* (1906), Louise Beebe Wilder's *Colour in My Garden* (1918), and Nellie Doubleday's *American Flower Garden* (1909) written under the pseudonym Neltje Blanchan.[116]

Better Homes and the Small House Movement, 1919 to 1945

After World War I, improving the quality of American domestic life took on special importance. Alliances formed among architects, real estate developers, builders, social reformers, manufacturers, and public officials—at both national and local levels—to encourage home ownership, standardized home building practices, and neighborhood improvements.

The Better Homes Campaign

Better Homes in America, Inc., a private organization founded in 1922, spearheaded a national campaign for domestic reform focused on educating homeowners about quality design and construction. Promoted by *The Delineator*, a popular Butterick publication for women, the organization gained the support of U.S. Secretary of Commerce Herbert Hoover and formed a nationwide network of local committees that encouraged both the construction of new homes and home remodelling projects. A national demonstration home, "Home Sweet Home," a modernized version of songwriter John Howard Paynes's Long Island birthplace, was constructed on the National Mall in 1923, and "Better Homes Week" activities and competitions were held nationwide. Annual competitions recognized the work of architects, such as Royal Barry Wills of Boston and William W. Wurster of San Francisco, whose small house designs would influence popular taste nationwide for homes described as New England Colonial or Monterey Revival.[117]

Architect-Designed Small Houses

The Small House Architects' Service Bureau was established in Minneapolis in 1919 with the purpose of providing architect-designed plans and technical specifications to builders of small houses. A "small house" was defined as one having no more than six rooms. Sponsored by the AIA, the bureau was a nonprofit organization made up of architects from all parts of the country devoted to the problem of designing small homes in a variety of popular forms and styles. Home builders could order complete working drawings from *The Small House*, a periodical, or plan catalogs such as *Small Homes of Architectural Distinction* (1929). The bureau endeavored to raise the public's awareness of the value of professional design and encouraged homeowners and builders to secure a local architect to supervise construction.[118]

In New York, the Home Owners Service Institute, headed by architect Henry Atterbury Smith in the 1920s, ran the weekly "Small House Page" of the Sunday *New York Tribune*, sponsored local design competitions and model home demonstrations, and published *The Books of A Thousand Homes* (1923). The institute raised the variety and quality of American homes by disseminating a large number of working drawings and plans nationwide—all the work of professional architects such as Frederick L. Ackerman and Whitman S. Wick—and forming alliances with private trade groups and manufacturers, including the American Face Brick Association, Curtis Woodwork Company, and National Lumber Manufacturers Association.[119]

Popular magazines—including *Better Homes and Gardens, American Home, House and Garden, Garden and Home Builder, McCall's*, and *Sunset*—reflected the growing interest in home improvement and appealed increasingly to owners of small homes. They carried articles on new house designs, interior decoration, and gardening, as well as advertisements for the latest innovations in manufactured products. Trade pamphlets such as Richard Requa's *Old World Inspiration for American Architecture* by the Monolith Portland Cement Company of Los Angeles reflected emerging alliances between the building industry and designers interested in promoting regional trends.

The small house of the 1920s appeared in many forms and a variety of bungalow and period revival styles, the most popular being drawn from the English Tudor Revival and a host of American Colonial influences, including Dutch, English, French, and Spanish. The movement resulted in a great diversity of architectural styles and types nationwide as regional forms and the work of regional architects attracted the interest of an increasingly educated audience of prospective home owners.

Federal Home Building Service Plan

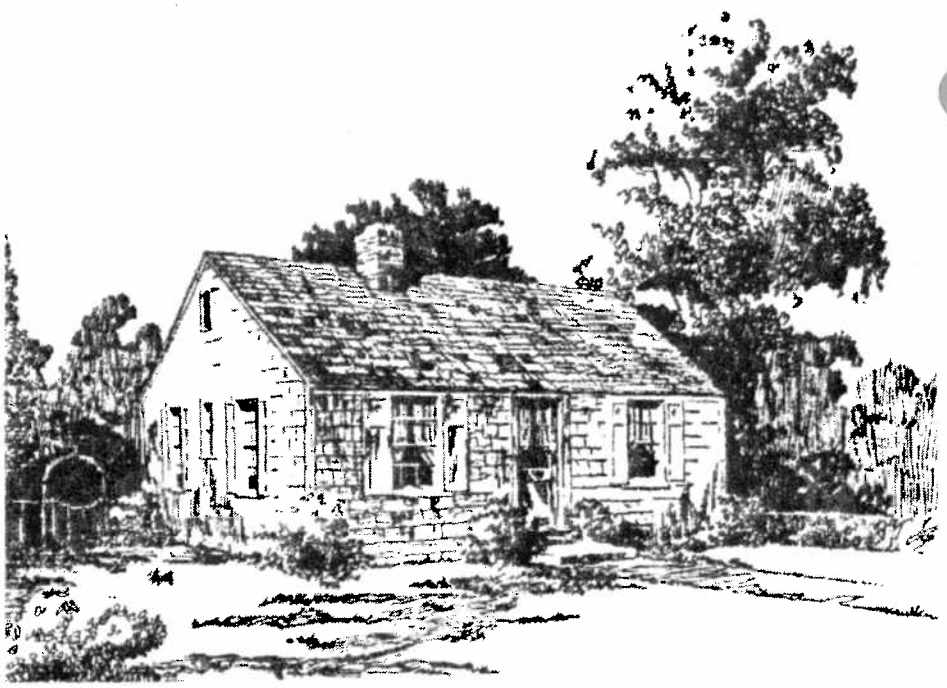
Although the demand for architect designed small houses was seriously curtailed during the Great Depression, AIA-sponsored service bureaus continued to operate in a number of major cities across the United States, including Boston, New York, Memphis, Houston, and Los Angeles, where they found support from local savings and loan associations interested in ensuring that the homes they mortgaged were a sound investment. In 1938, the Federal Home Loan Bank Board, Producers Council of the NAREB, and the AIA joined together to sponsor the Federal Home Building Service Plan, a program of certification which, during the next

decade, helped make home financing available to home owners who used service bureau plans and retained the services of registered architects to supervise construction. Although regionally-inspired Colonial Revival designs dominated, new forms such as the California Ranch house, appeared in the portfolios of approved architect-designed plans.

Landscape Design for Small House Grounds

By the late 1920s, professional landscape architects, such as Stephen Child and Sidney and S. Herbert Hare, had well established reputations for subdivision design and small residential projects in upper-income planned suburbs, such as Tucson's Colonia Solana and Kansas City's Country Club District. In 1923, the Home Owners Service Institute drew attention to the value of using the services of a professional landscape architect to arrange dwellings on site, lay out home grounds, and develop planting schemes in neighborhoods of small suburban homes. Garden City planners Stein and Wright recognized the profession's role in creating moderate-income neighborhoods when they hired Marjorie Sewell Cautley to assist their work at Sunnyside and Radburn, and encouraged the Buhl Foundation in Pittsburgh to hire Ralph E. Griswold to assist with the layout and planting of Chatham Village.[120]

Mrs. Francis King (Louise Yeomans King), a leader in the garden club movement, introduced the "Little Garden Series" in 1921, marking an increasing interest in the design of the small suburban lot. The series, which included Fletcher Steele's *Design in the Little Garden* (1924), brought home owners practical and aesthetic advice from professional landscape architects and successful gardeners. Other books by landscape architects reflecting this trend included Myrl E. Bottomley's *Design of Small Properties* (1926), Cautley's *Garden Design* (1935), Frank A. Waugh's *Everybody's Garden* (1930). Helen Morgenthau Fox's *Patio Gardens* (1929) and Richard Requa's *Architectural Details of Spain and the Mediterranean* (1927), both featuring Spanish and Mediterranean influences, encouraged the development of regional gardening forms that corresponded to emerging trends in house design and were suited to the warmer climates of California and Florida.[121]



House A elevations and plan *from* Principles of Planning Small Houses *(1936). Measuring 534 square feet, House A was the simplest FHA design and became known in the home building industry as the "FHA minimum house." The basic two-bedroom model could be varied by using different building materials, adding stylistic ornamentation, or by turning the house so that the gable faced the street. (Courtesy Library of the U.S. Department of Housing and Urban Development)*

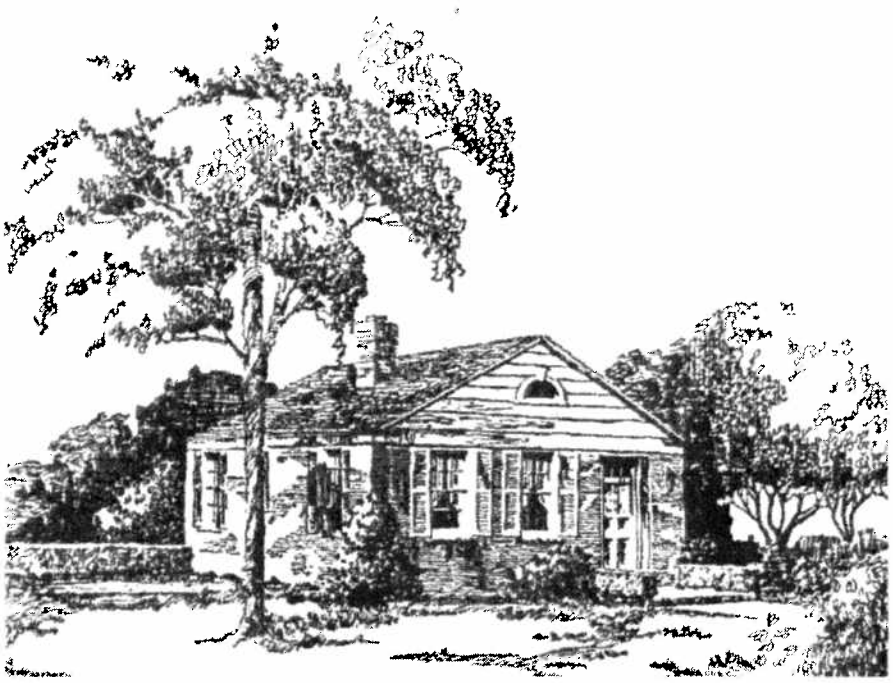
Public and Private Initiatives: The Efficient Low-Cost Home, 1931-1948

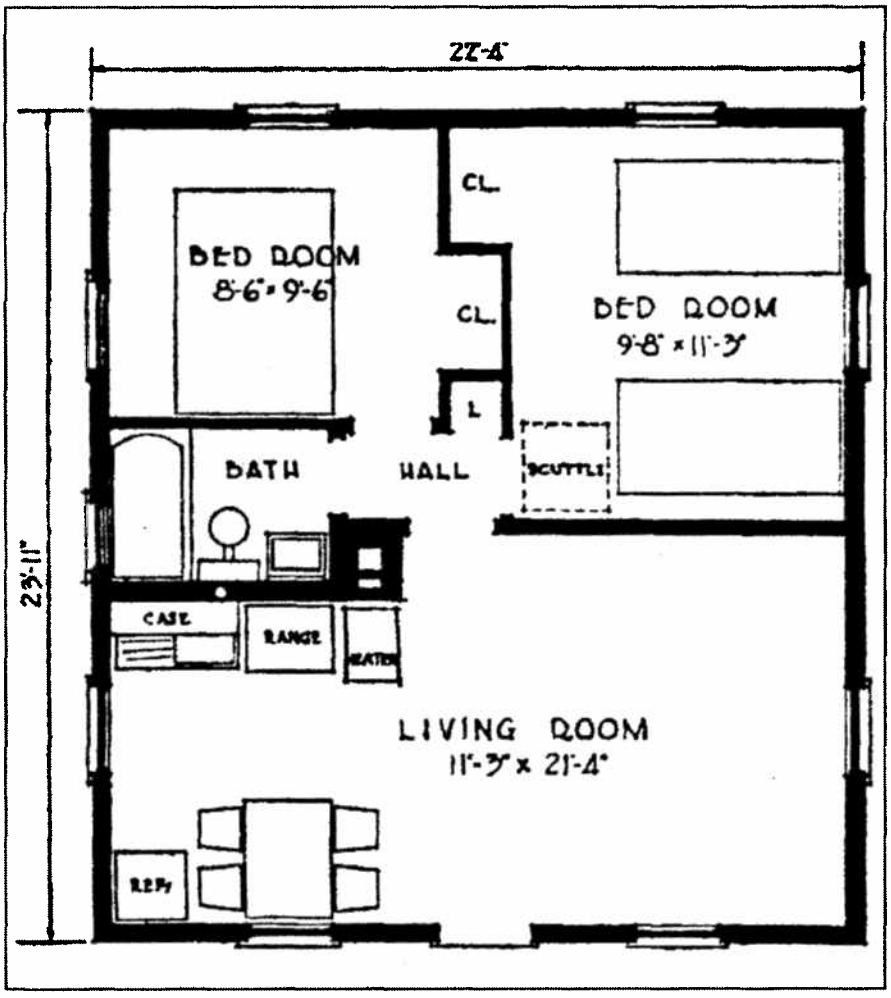
As the Great Depression deepened, housing starts declined precipitously, coming almost to a standstill. Discussion of the ideal small house took on new urgency with the collapse of the home building industry and the rising rate of mortgage foreclosures.

Findings of the 1931 President's Conference

With the recommendations of the Nation's leading experts, the 1931 conference endorsed the objective of reforming the Nation's system of home financing, improving the quality of housing for moderate and lower-income groups, and stimulating the building industry. For house design, these measures meant improving the design and efficiency of the American home while lowering its cost. Through a combination of private and public efforts, the design of efficient, low-cost housing—in the of form single, two-family, and multiple family dwellings—became a national priority, reflecting to a large extent the recommendations made by the conference committees.

The Committee on Design brought together experienced architects and developers who called for improvements in small house design such as building houses in well planned groups to avoid the monotony created by the repetition of uniform houses on narrow lots and siting houses to benefit from sunlight, air, and outdoor space. Representatives from trade organizations, building associations, and materials manufacturers formed the Committee on Construction, which





upheld the need for labor and time conserving methods, standard building codes, improved standards of workmanship, education and research by trade associations, and economies of prefabrication. Another committee examined the affordability of heating, ventilating, and air conditioning, and set basic requirements for plumbing and sanitation, electric wiring, and refrigeration.[122]

The Committee on Landscape Planning and Planting, which brought together landscape architects experienced in residential design and representatives of the organizations such as the Garden Club of America and National Council of State Garden Club Federations, upheld the importance of attractive yard design and landscape plantings to enhance a home owner's comfort and enjoyment as well as increase property values.[123]

FHA's Minimum House and Small House Program

Through its approval of properties for mortgage insurance and the publication of housing and subdivision standards, the FHA instituted a national program that would regulate home building practices for many decades. House designs, first published in FHA's *Principles of Planning Small Houses* (1936), were updated periodically. Circulars, such as *Property Standards, Recent Developments in Building Construction,* and *Modern Housing,* addressed issues of prefabrication methods and materials, housing standards, and principles of design.

The five FHA house types that appeared in *Planning Small Houses* in 1936 offered "a range in comfort of living," and in succession a "slightly increasing accommodation." Illustrated by floor plans and simple elevations, each type was void of nonessential spaces, picturesque features, and unnecessary items that would add to their cost, following FHA's principle for "providing a maximum accommodation within a minimum of means." Houses could be built in a variety of materials, including wood, brick, concrete block, shingles, stucco, or stone. To increase domestic efficiency,

new labor saving technologies were introduced: kitchens were equipped with modern appliances, and the utility room's integrated mechanical system replaced the basement furnace of earlier homes.[124]

The simplest FHA design became known in the home building industry as the "FHA minimum house." Measuring 534 square feet and having no basement, House A was a one-story, two-bedroom house designed for a family of three adults or two adults and two children. A small kitchen and larger multipurpose living room extended across the front of the house, while two bedrooms and a bathroom were located off a small hallway at the back of the house. The slightly larger House B provided 624 square feet of living space and had more lasting appeal.[125]

Houses C and D were two-story homes, having two upstairs bedrooms, with the latter offering a simple attached garage. House E, a compact two-story, three-bedroom house, was the largest and most elaborate of FHA's early designs. Illustrated with a classically inspired doorway and semicircular light in the street-facing gable, it demonstrated that a house could be "attractively designed without excessive ornamentation."[126]

FHA's 1940 edition of *Planning Small Homes* introduced a dramatically different, flexible system of house design based on the principles of expandability, standardization, and variability. Praised for its livability, the simple one-story "minimum" house became the starting point from which many variations arose as rooms were added or extended to increase interior space, often forming an L-shaped plan. Exterior design resulted from the combination of features such as gables, porches, materials, windows, and roof types. Factors such as orientation to sunlight, prevailing winds, and view became as important as the efficient layout of interior space. Fireplaces and chimneys could be added, as well as basements. The revised edition also included designs for two-bedroom, two-story houses having central-hall and sidewall-stair plans, some offering built-in garages and additional bedrooms.[127]

The new FHA principles provided instructions for grouping similarly designed houses in cul-de-sacs and along streetscapes by varying the elements of exterior design in ways that avoided repetition and gave the neighborhood an interesting and pleasing character, for example, by varying the placement of each house on its lot and introducing a variety of wall materials and roof types. The principles were directed at operative builders who, taking advantage of the cost-reducing practices of standardization and more liberal financing terms, were becoming increasingly aware of the advantages of building homes on a large scale and, for the first time, were creating what has become known as "tract" housing.[128]

FHA's Rental Housing Program

FHA's Large-Scale Rental Housing Division worked closely with operative builders to design apartment villages that were efficient cost-wise, but also attractive and desirable places for moderate-income renters. Utilizing superblock planning and incorporating garden courts and common greens, they were strongly influenced by Stein and Wright's Garden City projects at Sunnyside Gardens, Radburn, and Chatham Village, as well as the highly recognized World War I defense hous-

ing communities of Seaside Village at Bridgeport, Connecticut, and Yorkship Village at Camden, New Jersey.

The overall aesthetic effect of garden apartment villages relied on the varied and irregular massing of units within a superblock, separation from automobile traffic, an interlocking arrangement of housing units to fit a site's topography which avoided the appearance of either rowhouses or large apartment blocks, and the provision of landscaped walkways, gardens, and recessed entry courts. Staggered roof lines and unifying cornices, fascia, and dentil friezes, and the repetition of modest and similar architectural embellishments—doorways, transoms, mouldings, window surrounds, roof designs—unified each complex's overall design.

Economies of scale and the use of standardized building components dictated the design of communities such as Buckingham in Arlington, Virginia. Functional efficiency and cost reduction relied on the use of standardized components and appliances, the development of consolidated mechanical systems, and an efficient arrangement of rooms within each apartment, and of apartments within each dwelling unit. Influenced by Henry Wright, who had advised on the design of Buckingham and whose *Rehousing Urban America* was published in 1935, FHA architect Eugene H. Klaber developed a series of efficient "unit plans," which published in FHA's monthly *Architectural Bulletin* (1940), guided much market-rate rental housing construction through World War II.[129]

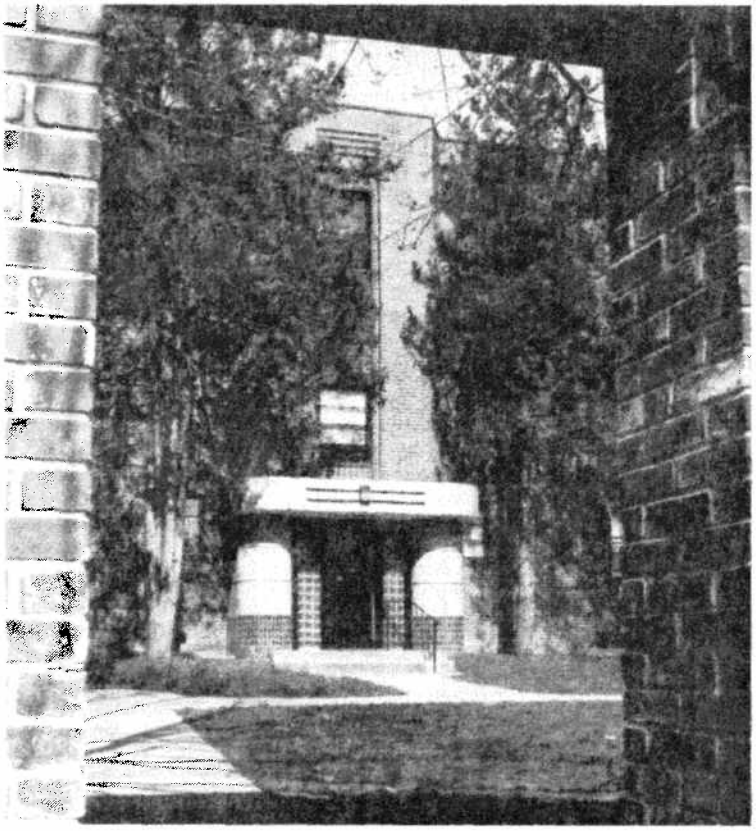
Prefabricated Houses

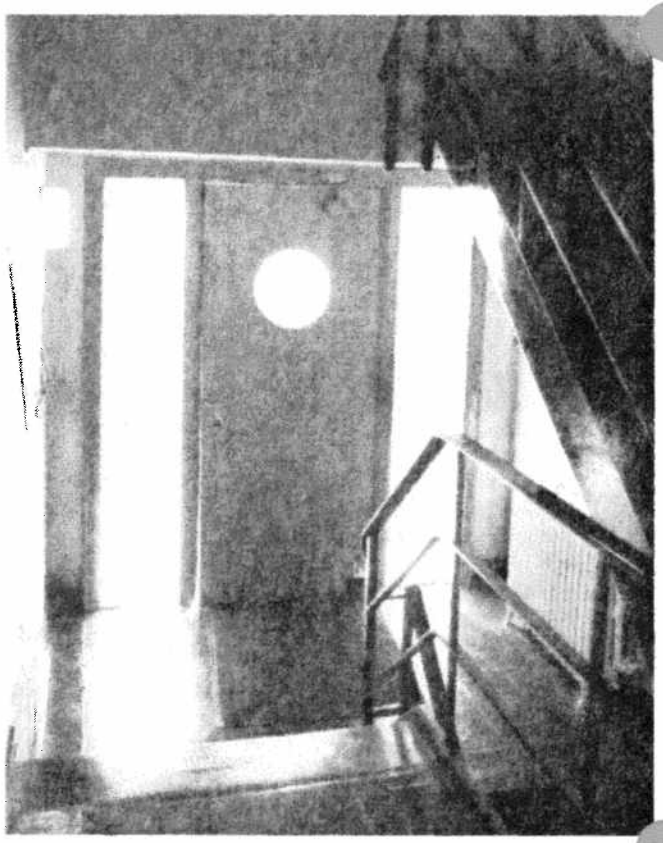
The 1930s became a decade of experimentation. A number of private organizations assumed the role of "scientific housers" with the purpose of creating a house that a majority of American wage earners could afford. Others explored the principles of mass production and prefabrication to reduce the cost of building materials and housing.[130]

Bemis Industries, Inc., under the direction of Albert Farwell Bemis, experimented with prefabricated modular systems using a variety of materials including steel, gypsum-based blocks and slabs, and composition board and steel panels to create a series of model homes; this work established the principles for Bemis's three-volume *The Evolving House* (1936), which became a standard reference work on prefabrication. Bemis pursued a three-fold strategy: first, simplify the house by eliminating seldomly used space; second, streamline the construction

Tract housing had its origins *in the late 1930s as builders sought ways to reduce the cost of construction, capture the growing market of FHA-qualified home buyers, and take advantage of the time and cost saving benefits of building homes on a large scale. By moving the entrance to one side and using newly-available asbestos shingles and steel casement windows, local architects Schreier & Patterson adapted FHA's House E (far left), a popular two-story design, for houses in a new neighborhood (middle) in metropolitan Washington, D.C. (Illustration courtesy Library of the U.S. Department of Housing and Urban Development; historic photo courtesy Library of Congress, Theodor Horydczak Collection, neg. LC-H814-T-2387-016 DLC)*

Built in 1936 by newspaper publisher Charles A. Mitten, *the* Mesa Journal-Tribune *FHA Demonstration House in Mesa, Arizona, sparked great local interest in home ownership and stimulated a local boom in FHA-approved construction in the late 1930s. (Photo by Shirley Kehoe, courtesy Arizona Historic Preservation Office)*





(above) ***Samester Parkway Apartments*** *(1939) in Baltimore, Maryland. A central garden court sheltered from nearby streets and a series of attractive entrances demonstrate the value of superblock planning and use of standardized unit-plans in the design of large-scale, FHA-approved rental communities. Sun-filled stairwells with glass-block sidelights, porthole windows, and streamlined aluminum railings illustrate FHA's practical concerns for creating a healthy, well-organized environment, as well as the aesthetic influences of European Modernism and the Art Moderne style. (Photos by Betty Bird, courtesy Maryland Department of Housing and Community Development)*

(far right) ***House made of prefabricated "Cemesto" panels*** *at the U.S. nuclear research facility in Oak Ridge, Tennessee. This system of prefabrication was originally developed by the John B. Pierce Foundation and Celotex Corporation for employee housing at the Glenn L. Martin Aircraft Company near Baltimore, Maryland. During World War II, it was adapted on a large-scale for both single- and multiple family dwellings to house defense workers and their families. (Photo by Kimberley A. Murphy, courtesy Tennessee Historical Commission)*

process by using time and labor-saving equipment, materials, and techniques; third, apply principles of modern industrial management for production based on economies of scale and the sequential production of components.[131]

The John B. Pierce Foundation of New York City examined the American home from the standpoint of efficiency. Through space-and-motion studies of family living habits, the foundation developed the prototype for a 24 by 28 foot house, having four rooms and a bath which became a community building standard. The foundation developed a number of models, including a demonstration village at its laboratory in Highbridge, New Jersey, and worked with manufacturers to develop small marketable dwellings using innovative materials and prefabricated components, which were manufactured on a large scale and purchased by the U.S. government during World War II.[132]

In 1935, the Forest Products Laboratory of the U.S. Department of Agriculture developed a "stress-skin" plywood house, which spurred a series of efforts to develop insulated, prefabricated wood panels that could be manufactured on a large scale and shipped for easy assembly onsite. Such prefabricated systems were adopted by a number of manufacturers, including the Celotex Company of Chicago and Homasote Company of Trenton, New Jersey, which would both become leading manufacturers of housing for defense workers during World War II.[133]

In its annual revision of *Recent Developments in Building Construction*, FHA reported on new developments and provided a list of the materials and methods approved by the U.S. Bureau of Standards. In 1940 the list included methods ranging from a system of steel panel construction manufactured by Steel Buildings, Inc., of Ohio to concrete construction methods promoted by the Portland Cement Association.[134]

Prefabricated methods took on increasing importance with the onset of World War II as the construction of both temporary and permanent housing in places determined critical for defense production became a national priority. The need to speed production and lower construction costs guided these efforts, many of which were funded under the Lanham Act and public housing programs. After the war, manufacturers continued to shape the suburban landscape based on principles of mass production and prefabrication. Federal loans for the construction of manufacturing plants through the Reconstruction Finance Corporation made it possible for manufacturers such as Carl Strandlund of Chicago and Harvey Kaiser in California to fund large-scale efforts to produce housing components that could be shipped and assembled onsite to provide housing for the families of returning veterans.[135]

Many attempts to produce factory-made prefabricated dwellings experienced limited success and failed, including the demountable Acorn houses introduced in 1945 by Carl Koch and John Bemis of Massachusetts and the porcelain-enamel steel Lustron House, manufactured from 1947 to 1950, the invention of manufacturer Carl Strandlund and architect Morris Beckman.

To architects such as William Wurster and Walter Gropius, prefabrication promised a solution to housing America's lower-income families. During the 1940s, Gropius worked closely with Konrad Wachsmann and the General Panel Corporation to develop a system of prefabrication that would markedly reduce the cost of housing. Although the final model called "the Packaged House" was technically a success, the company's efforts to market the system and remain financially solvent failed.[136]

More successful were house manufacturers such as National Homes Corporation of Lafayette, Indiana, and Gunnison Homes of New Albany, Indiana, which readily adapted their factory operations to postwar conditions and offered a number of designs suited to the needs, incomes, and tastes of postwar middle-income home buyers. These companies engaged the services of well-known architects, including Royal Barry Wills and Charles M. Goodman, and offered expanding portfolios with the latest in interior and exterior features, such as heat-insulated windows and exposed redwood ceilings.[137]

Postwar Suburban House and Yard, 1945-1960

By 1945, several factors—the lack of new housing, continued population growth, and six million returning veterans eager to start families—combined to produce the largest building boom in the Nation's history, almost all of it concentrated in the suburbs. From 1944 to 1946, single-family housing starts increased eight-fold from 114,000 to 937,000. Spurred by the builders' credits and liberalized terms for VA- and FHA-approved mortgages by the end of the 1940s, home building proceeded on an unprecedented scale reaching a record high in 1950 with the construction of 1,692,000 new single-family houses.[138]

The experience of World War II demonstrated the possibilities offered by large-scale production, prefabrication methods and materials, and streamlined assembly methods. In 1947 developer William Levitt began to apply these principles to home building in a dramatically new way, creating his first large-scale suburb, Levittown on Long Island, which would eventually accommodate 82,000 residents in more than 17,500 houses.[139]

Levitt's idea was to lower construction costs by simplifying the house, assembling many components off-site, and turning the construction site into a streamlined assembly line. The economy of using factory produced building components, such as pre-cut wall panels and standardized mechanical systems, significantly lowered the cost of construction. By adapting assembly line methods for horizontal or serial production, Levitt and Sons was able to systematically and efficiently assemble the components on site. The construction process was divided into 27 steps, each performed in sequence by a specialized crew. The tasks, skills, and manpower to complete each step were precisely defined and each member was trained to perform a set of repetitive tasks, enabling work crews to move efficiently and quickly through each site, thus establishing the firm's reputation for completing a house every 15 minutes.[140]

The vast subdivisions of Cape Cods and later Ranch homes, mocked by critics as suburban wastelands, represent not only an unprecedented building boom, but the concerted and organized effort by many groups, including the Federal government, to create a single-family house that a majority of Americans could afford. Levitt actually perfected a construction process that had been in the making for more than two decades. Other developers did the same, including Harvey Kaiser at Panorama City, near Los Angeles, and Philip M. Klutznick of American Community Builders, Inc., at Park Forest, Illinois. The success of Levitt and others resulted in the emergence of large-scale developers, called "merchant builders," who would apply their successful formulas for building large communities in one location after another, often accommodating changing tastes, economics, and consumer demand in new and improved house designs.[141]

From the FHA Minimum House to the Cape Cod

The Cape Cod provided most of the low-cost suburban housing immediately following the war and was built in groups of varying sizes, sometimes numbering the hundreds. Often located on curvilinear streets and cul-de-sacs that reflected the FHA guidelines for neighborhood planning, Cape Cods appeared in a variety of materials, including sheets of insulated asbestos shingles available after the war in an increasing assortment of colors.

The Cape Cod that eager prospective renters lined up to inspect in the first Levittown in June 1947, was one-and-a-half stories and built on a concrete slab. Its 750 square feet of living space was divided into a living room, a kitchen, two bedrooms, and a bath. Set on a lot of 6,000 square feet, the exterior of the house—with a steeply pitched gable roof pierced by two dormers above a clapboarded first story—was a variation on a Cape Cod cottage and was a somewhat larger version of the FHA minimum house, which had been improved and expanded in FHA's 1940 *Principles for Planning Small Houses*.[142]

Large-scale subdivisions not only took form on the periphery of the Nation's largest metropolitan areas, but also around many smaller cities. For middle- and upper-middle-income families, especially in the East, simplified versions of pre-war "small house" designs such as brick or clapboarded Cape Cod and other Colonial Revival forms continued in popularity, in large part due to architect Royal Barry Wills, who published numerous plan books, including *Houses for Good Living* (1940), *Better Homes for Budgeteers* (1941), *Houses for Homemakers* (1945), and *Living on the Level* (1955).[143]

The Suburban Ranch House

The suburban Ranch house of the 1950s reflected modern consumer preferences and growing incomes. With its low, horizontal silhouette and rambling floor plan, the house type reflected the nation's growing fascination with the informal lifestyle of the West Coast and the changing functional needs of families.[144]

In the 1930s California architects Cliff May, H. Roy Kelley, William W. Wurster, and others adapted the traditional housing of Southwest ranches and *haciendas* and Spanish Colonial revival styles to a suburban house type suited for middle-income families. The house was typically built of natural materials such as adobe or redwood and was oriented to an outdoor patio and gardens that ensured privacy and intimacy with nature. Promoted by *Sunset* Magazine between 1946 and 1958 and featured in portfolios such as *Western Ranch Houses* (1946) and *Western Ranch Houses* by Cliff May (1958), May's work gained considerable attention in the Southwest and across the nation.[145]

In the late 1940s popular magazine surveys indicated the postwar family's preference for the informal Ranch house as well as a desire to have all their living space on one floor with a basement for laundry and other utilities and a multipurpose room for hobbies and recreation. Builders of middle and upper-income homes mimicked the architect-designed homes of the Southwest, offering innovations such as sliding glass doors, picture windows, carports, screens of decorative blocks, and exposed timbers and beams, which derived as much from modernistic influences as those of traditional Southwestern design.[146]

Builders of low-cost homes, however, sought ways to give the basic form of FHA-approved houses a Ranch-like appearance. By late 1949, Levitt & Sons had modified the Cape Cod into a Ranch-like house called "The Forty-Niner," by leaving the floor plan intact and giving the house an asymmetrical facade and horizontal emphasis by placing shingles on the lower half of the front elevation and fitting horizontal sliding windows just below the eaves. Picture windows, broad chimneys, horizontal bands of windows, basement recreational rooms, and exterior terraces or patios became distinguishing features of the forward-looking yet lower-cost suburban home.[147]

In the 1950s, as families grew larger and children became teenagers, households moved up to larger Ranch houses, offering more space and privacy. With the introduction of television and inexpensive, high-fidelity phonographs, increasing noise levels created a demand for greater separation of activ-

ities and soundproof zones. The split-level house provided increased privacy through the location of bedrooms on an upper level a half-story above the main living area and an all-purpose, recreation room on a lower level. The Ranch house in various configurations, including the split level, continued as the dominant suburban house well into the 1960s.

The Contemporary House

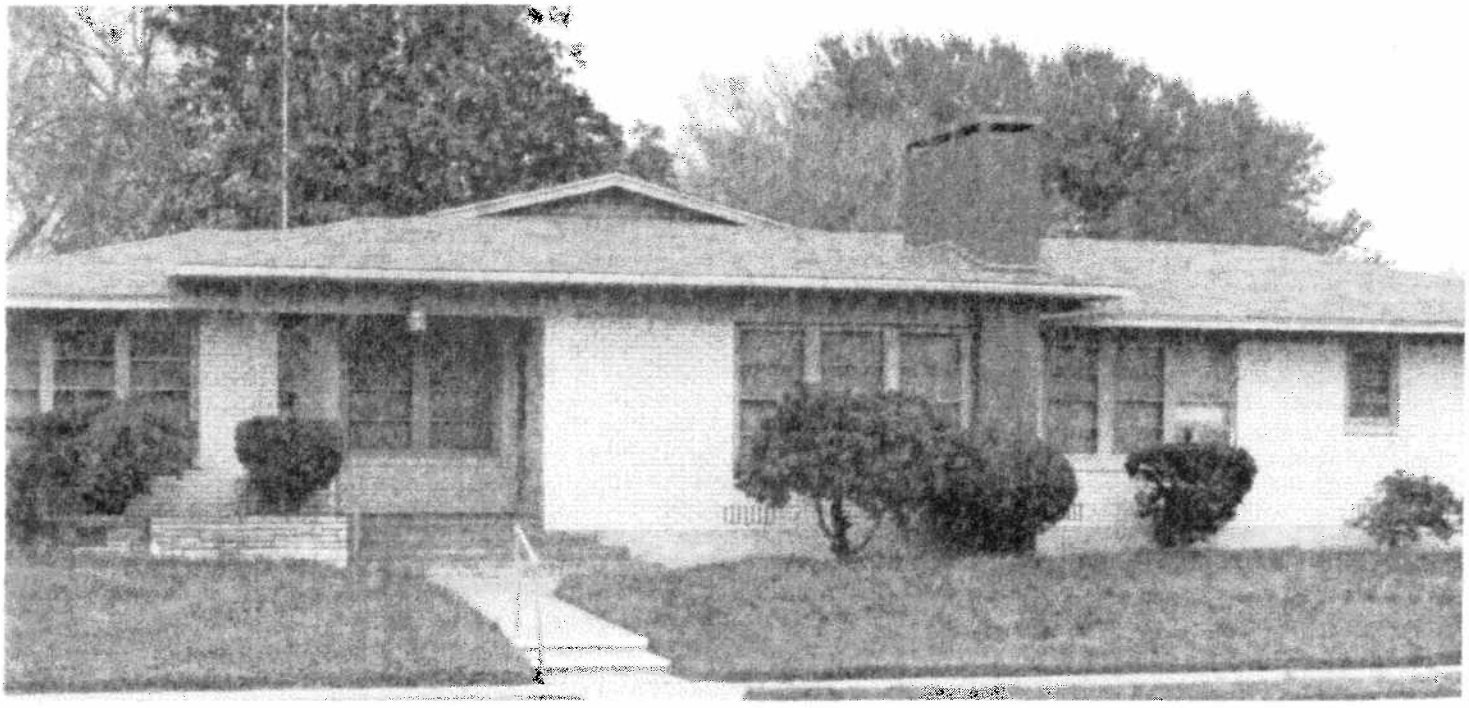
The influence of Frank Lloyd Wright, Walter Gropius, Marcel Breuer, Richard J. Neutra, Mies van der Rohe, and other modernists inspired many architects to look to new solutions for liveable homes using modern materials of glass, steel, and concrete, and principles of organic design that utilized cantilevered forms, glass curtain walls, and post-and-beam construction. The contemporary home featured the integration of indoor and outdoor living area and open floor plans, which allowed a sense of flowing space. Characteristics such as masonry hearth walls, patios and terraces, carports, and transparent walls in the form of sliding glass doors and floor-to-ceiling windows became hallmarks of the contemporary residential design.[148]

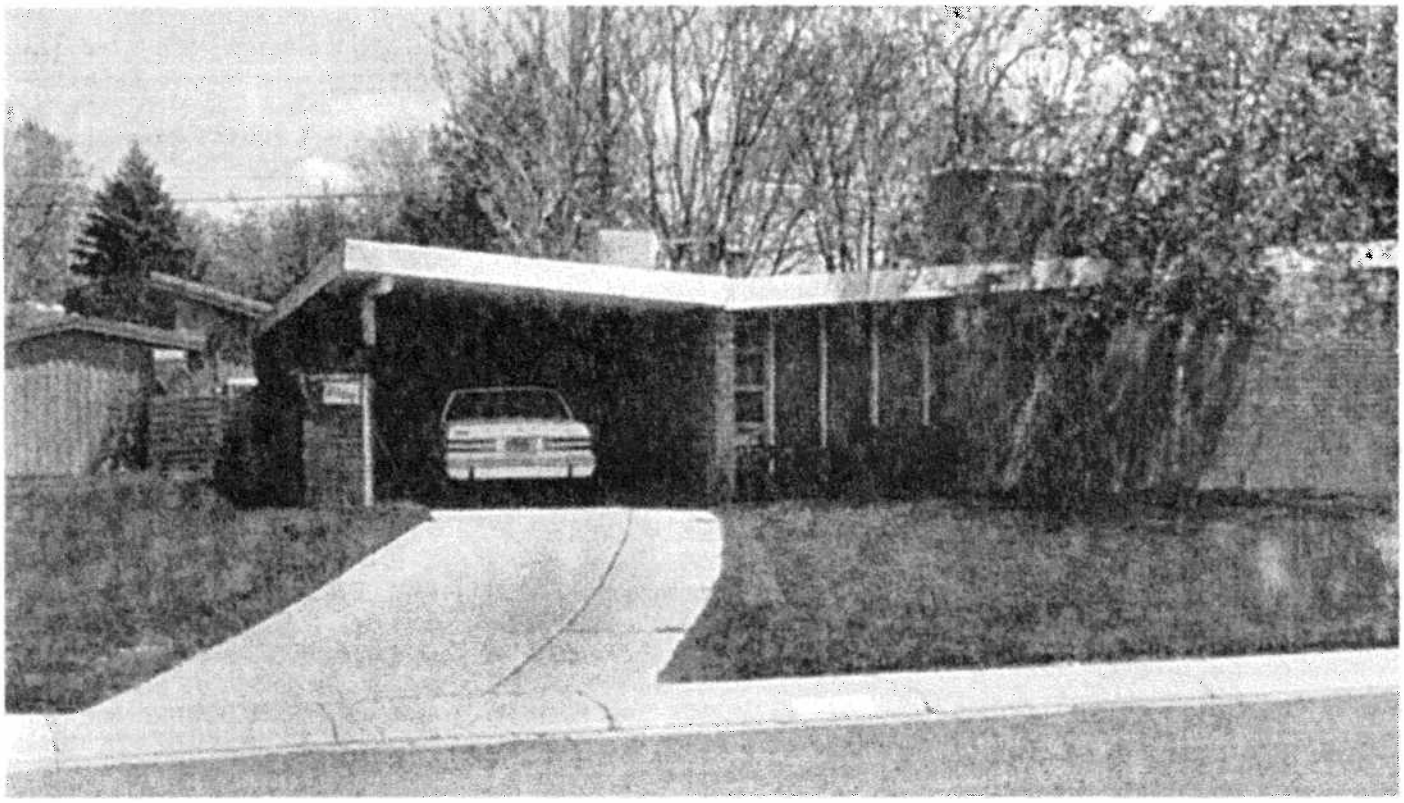
The principles of European modernism expressed in the International Style had been introduced to the American public in the 1932 Museum of Modern Art exhibition. The Century of Progress World's Fair at Chicago in 1933 introduced Americans to a number of modern houses, including the House of Tomorrow by George Fred Keck, noted for its polygonal form, innovative use of glass, and showcase of modern building materials.[149]

James and Katherine Ford's *Modern House in America* (1940) and professional magazines, such as the *Architectural Record*, *Progressive Architecture*, and *Architectural Forum*, promoted modernistic architect-built homes and featured the work of a rising generation of modernists including Edward D. Stone, Paul Thiry, William Lescaze, George Howe, Alden B. Dow, Pietro Belluschi, and Gregory Ain. Under the editorship of John Entenza, the "case study series" in *Arts and Architecture* from 1945 and 1966 included designs for 36 houses that reflected new approaches to domestic design and featured mass production techniques, innovative planning, and new materials. The series not only featured outstanding examples of upper-income homes in California by noted designers such as Charles and Ray Eames, Raphael Soriano, and Ralph Rapson, but also a proposed but never-executed 260-home subdivision in San Fernando Valley, designed by A. Quincy Jones, Jr., and Frederick E. Emmons and co-sponsored by merchant builder Joseph Eichler and the Producers' Council.[150]

Architects and others promoted the development of small houses reflecting modernistic design principles to meet the postwar housing shortage through plan books and detailed instructions that pointed out the construction and space efficiencies offered by modern design. Such books included *The Small*

Ranch house (1952) in the Denver Court Historic District, Galveston, Texas. *Developed by West Coast architects in the 1930s and promoted by* Sunset *Magazine in books such as architect Cliff May's* Western Ranch Houses *(1946), the sprawling Ranch house attained great popularity and appeared nationwide in the 1950s, often on the unbuilt lots of early subdivisions. (Photo by Lesley Sommer, courtesy Texas Historical Commission)*





Contemporary house (1951) with innovative "butterfly" roof *and carport by architect-planner Eugene Sternberg for Arapahoe Acres, a postwar suburb in Englewood, Colorado. The contemporary house of the 1950s offered families informal floor plans, window walls that merged interior and exterior spaces, and patios and terraces that provided outdoor rooms. Private organizations, including the Revere Quality House Institute and the Southwest Research Institute, recognized the value of such homes for their efficient arrangement of space, the low cost of construction, and pleasing modernistic design. (Photo by Diane Wray, courtesy of Colorado Historical Society)*

House of Tomorrow (1945) by Los Angeles architect Paul R. Williams; *Tomorrow's House: How to Plan Your Post-War Home Now* (1945) by designers George Nelson and Henry N. Wright; and the Museum of Modern Art's *If You Want to Build a House* (1946) by Elizabeth B. Mock.[151]

Frank Lloyd Wright's Usonian houses of the 1930s were forward looking with their horizontal emphasis, flat and sloping roofs, large windows, corner windows, and combination of natural wood and masonry materials. Wright continued to explore the problem of the small home, designing in 1938 an interesting group of quadraplexes, the Suntop Houses, at Ardmore, Pennsylvania. He gave new form to the Usonian house in the 1950s, and published *The Natural House* (1954), where he elaborated on his principles of organic design to create livable dwellings that integrated home and site.

Private organizations, such as the Revere Quality House Institute, Southwest Research Institute, and John D. Pierce Foundation, promoted the use of modern principles of design by sponsoring award programs and offering seals of approval for successful innovative designs. These programs encouraged the collaboration of developers and modernist architects and recognized the broadening array of new and innovative home building materials and prefabricated methods of construction.[152]

John Hancock Callender's *Before You Buy a House* (1953), a joint publication of the Southwest Research Institute and the Architectural League of New York, was designed to educate prospective home buyers about the efficiency, livability, and low-cost afforded by the "contemporary residential style." The book showcased dozens of communities of small homes from all parts of the country, including Arapahoe Acres in Englewood, Colorado; and many of merchant builder Joseph Eichler's subdivisions in California.[153]

In the 1950s AIA sponsored a Homes for Better Living award program in conjunction with *House and Home, Better Homes and Gardens,* and the National Broadcasting Corporation. This program recognized successful merchant-built communities such as Hollin Hills in Alexandria, Virginia, which featured the innovative domestic architecture of Charles M. Goodman.[154]

Appealing to an increasingly well-educated and prosperous audience, popular magazines heralded innovations in contemporary house design. The distinction between the Ranch and contemporary house became blurred as each type made use of transparent walls, privacy screens of design concrete blocks, innovations in open space planning, and the interplay of interior and exterior space. *House Beautiful* promoted Wright's designs as well as

other upper-income homes in the modernistic styles. *Better Homes* promoted designs to meet the incomes of a wider range of families and showcased successful owner-built designs alongside those of established architects, such as architect Chester Nagel's home in Lexington, Massachusetts. In the late 1940s *Better Homes* began to recognize outstanding examples, which were showcased as "Five Star Homes." Other magazines offered similar awards, including *Parents' Magazine,* which sponsored the "Best Home for Family Living" competition.[155]

Exploring the possibilities inherent in combining modern design and prefabrication methods, architect Carl Koch and John Bemis introduced the popular, mass-produced Tech-built house in the early 1950s. From 1952 to 1956, the U.S. Gypsum Corporation sponsored a well-publicized demonstration project at Barrington Woods, Illinois, which featured model homes by a number of leading designers. In addition, sources such as Koch's *At Home with Tomorrow* (1958) and Jones and Emmons's *Builder's Homes for Better Living* (1957) spurred a whole series of contemporary homes, whose facades by the end of the 1950s were dominated by overhanging eaves, broad gables, transparent walls, and aboveground balconies.

Postwar Suburban Apartment Houses

Modernism was embraced as the rental housing market expanded in the suburbs of large cities. Title 608 of the National Housing Act, which guaranteed builders 90 percent-mortgages on multiple family projects conforming to FHA standards, continued until the mid-1950s. Publication of Clarence Stein's *Toward New Towns* (1951) revived models for low- and mid-rise apartment villages, such as the Phipps Apartments at Sunnyside Gardens and the modernistic Baldwin Hills in Los Angeles. *Housing Design* (1954) by Columbia University professor Eugene Klaber set forth principles of unit-planning similar to those Klaber had developed for the FHA two decades earlier. FHA began to provide mortgage insurance for apartment buildings having elevators in the late 1940s. By the 1950s apartment buildings were equipped with improved mechanical systems, elevators, up-to-date appliances, central air conditioning, outdoor balconies, and newly available prefabricated components such as steelframed windows and sliding glass doors.[156]

Unlike their urban counterparts built on the site of cleared slums, high-rise suburban developments, which became increasingly popular in the late 1950s, were modeled after Le Corbusier's vision for the "radiant city" and luxury high-rise apartment houses in American cities, including Mies van der Rohe's Promontory Apartments (1949) and Lake Shore Drive Apartments (1951) in Chicago; Frank Lloyd Wright's Price Company Tower (1952) in Bartlesville, Oklahoma; and 100 Memorial Drive (1950) in Cambridge, Massachusetts, by the firm of Kennedy, Koch, DeMars, Rapson, and Brown. Their location along major expressways leading from the center city was motivated by convenience of location as well as advances in air conditioning, elevator design, mechanical systems, and structural design.[157]

Contemporary Landscape Design

New directions in landscape design accompanied the development of the Ranch house and contemporary residence in California. Emphasis on the integration of indoor and outdoor living encouraged the arrangement of features such as the patios and terraces, sunshades and trellises, swimming pools, and privacy screens. Several of the Case Study houses in *Arts and Architecture* featured the landscape work of Garrett Eckbo. Architects such as Paul Williams designed houses "with the living side facing a private garden." *Sunset* magazine publicized western gardens by Doug Baylis, Thomas Church, and Eckbo, a number of which formed the grounds of Ranch houses designed by Cliff May, and published *Landscape for Western Living* (1956). In addition, Thomas Church's *Gardens Are for People: How to Plan for Outdoor Living* (1955), and Garrett Eckbo's *Landscape for Living* (1950) and *Art of Home Landscaping* (1956) brought to a national audience simple principles for organizing the domestic yard into dignified lawns, private patios, informal garden rooms, and activity areas with simple, easy-to-maintain plants and shrubbery.[158]

The modern style sought to achieve an integration of interior and exterior space by creating lines of vision through transparent windows and doors to patios, intimate garden spaces, zones designed for special uses, and distant vistas. Hedges, freestanding shrubbery, and beds of low growing plants, arranged to form abstract geometrical patterns, reinforced the horizontal and vertical planes of the modern suburban house.[159]

Developers of contemporary subdivisions often secured the services of landscape architects as site planners to lay out their subdivisions and advise on the layout and planting of common areas, street corners, streets, and sidewalks. Others urged home owners to consult with landscape architects on the design of their suburban yards. The Southwest Research Institute encouraged such collaboration and recognized its achievement in suburban neighborhoods of contemporary homes, such as Hollin Hills in Alexandria, Virginia, where several landscape architects, including Dan Kiley, drew up planting plans for home owners and advised the developer on the planting of common areas.[160]

Figure 4.

Suburban Architecture and Landscape Gardening, 1832 to 1960

1832 Balloon frame construction invented in Chicago.

1838 *Rural Residences* by Alexander Jackson Davis published.

1841 Publication of *Treatise on Domestic Economy,* by Catharine E. Beecher and *Treatise on the Theory and Practice of Landscape Gardening* by Andrew Jackson Downing.

1842-1850 *Cottage Residences* and *Architecture of Country Houses* by Downing published.

1869 *The American Woman's Home* by Catharine E. Beecher and Harriet Beecher Stowe published.

1870 *Art of Beautifying Suburban Home Grounds* by Frank J. Scott published.

1876 *Model Homes for the People: A Complete Guide to the Proper and Economical Erection of Buildings,* the first of a series of mail order plan catalogs by George and Charles Palliser, published.

1878 *Modern Dwellings in Town and Country Adapted to American Wants and Climate* by Henry Hudson Holly published.

1907-1908 *How to Lay Out Suburban Home Grounds* by Herbert J. Kellaway and *Artistic Bungalows* by William Radford published.

Sears and Roebuck begins pre-cut, mail order house catalog sales.

1913-14 *Suburban Gardens* and *Planting Around the Bungalow* by Grace Tabor published.

1916 Frank Lloyd Wright's American System Ready-Cut method of prefabrication used in the Richard's Small House and Duplexes, Milwaukee, Wisconsin.

1918 *The Small Place: Its Landscape Architecture* by Elsa Rehmann published.

1919 Architects' Small House Service Bureau founded in Minneapolis.

1921 *The Little Garden* published, introducing "The Little Garden Series," edited by Mrs. Francis King (Louise Yeomans King).

1922 Better Homes movement founded by the Butterick Company and endorsed by Secretary of Commerce Herbert Hoover.

1922-23 Country Club Plaza, Kansas City, Missouri, first automobile-oriented regional shopping center, developed by J. C. Nichols.

1923 Home Owners Service Institute sponsors "Home Sweet Home," the official demonstration house for the Better Homes in America movement and publishes *Books of A Thousand Homes,* edited by Henry Atterbury Smith.

1926 Publication of Myrl E. Bottomley's *The Design of Small Properties.*

1928-1932 Variety of moderately priced small houses built at Radburn; grounds and plantings by Marjorie Sewell Cautley

1929 Architects' Small House Service Bureau, Inc., publishes *Small Homes of Architectural Distinction,* edited by Robert T. Jones.

1930 Park-and-Shop, Cleveland Park, Washington, D.C., designed by Arthur Heaton for Shannon and Luchs Real Estate.

1931 President's Conference on Home Building and Home Ownership.

1932 Museum of Modern Art, New York, mounts exhibition entitled, "The International Style: Architecture Since 1922."

1932-36 Chatham Village, at Pittsburgh, developed by the Buhl Foundation and designed by architects Ingham and Boyd and landscape architect Ralph E. Griswold.

1933-34 Century of Progress International Exhibition, Chicago, features "House of Tomorrow."

1934 Federal Housing Administration establishes programs for insuring mortgages on small homes and large-scale rental housing.

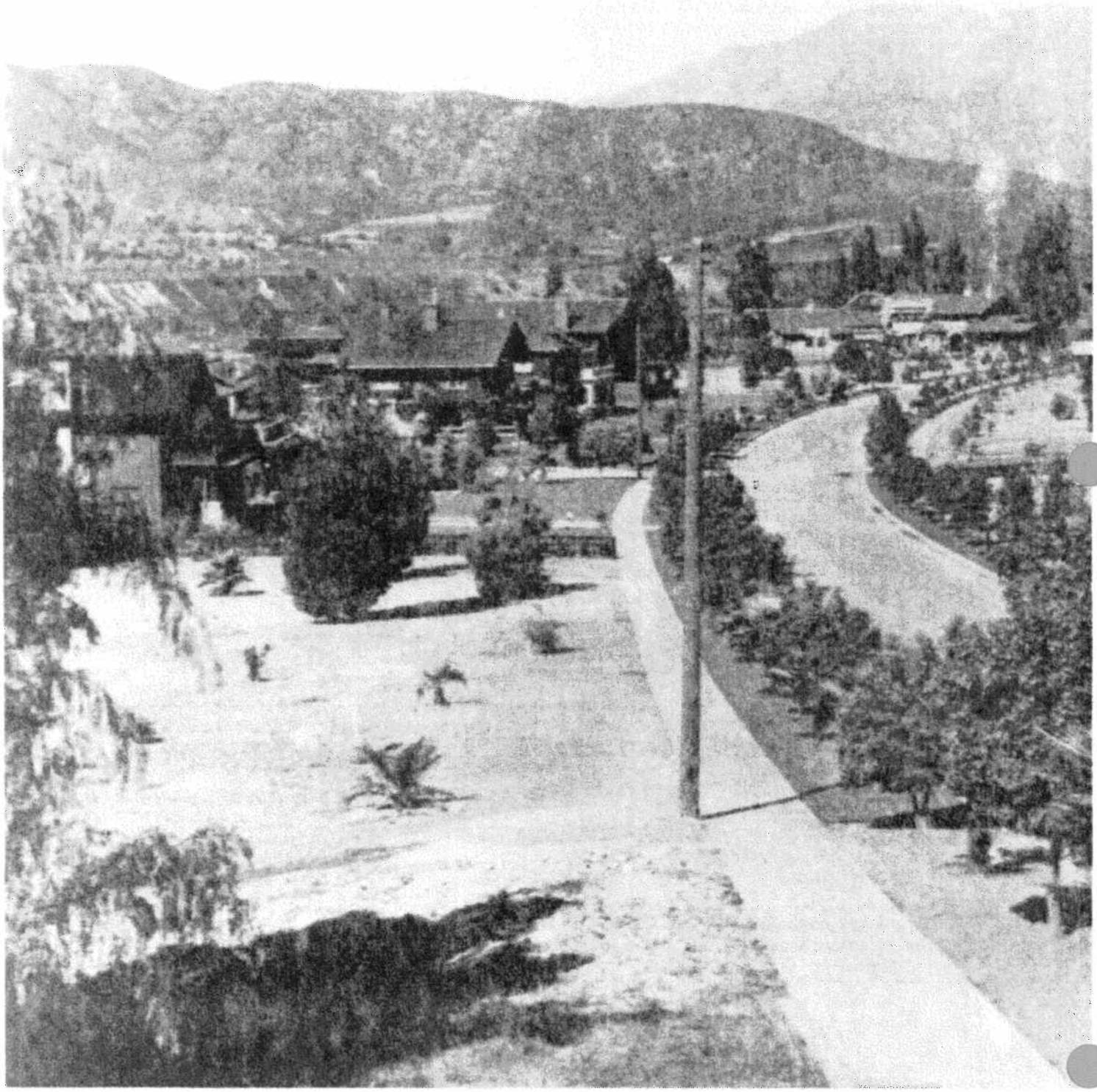
1935 *Rehousing Urban America* by Henry Wright and *Garden Design* by Marjorie Sewell Cautley published.

Demonstration of prefabrication at Purdue Research Village, Lafayette, Indiana.

Forest Products Laboratory of the U.S. Department of Agriculture introduces house made of "stress-skin" plywood panels.

1936 Bemis Industries publishes three-volume *The Evolving House,* which outlines principles of prefabrication.

	Federal Housing Administration publishes first standards for insurable neighborhoods and introduces the FHA minimum house.
1936-39	Buckingham Community, Arlington, Virginia, developed by Paramount Motors Company using the principles of economies of large-scale construction and standardization of building components.
1938	Federal Home Loan Bank Board, Producers Council, and AIA jointly introduce Federal Home Building Service Plan, encouraging home builders to use the services of registered architects to carry out construction according to architect-designed small house plans.
1940	Construction of Crow Island School, Winnetka, Illinois, by architects Eliel and Eero Saarinen and Perkins, Wheeler, and Will.
	Publication of *Modern House in America* by James Ford and Katherine Morrow Ford.
	FHA introduces new standards and an efficient, flexible system of house design and construction; issues "Architectural Bulletins" with unit plans for large-scale housing.
	John Pierce Foundation with the Celotex Company of Chicago, Illinois, introduces cemesto boards in the construction of prefabricated houses for Glenn Martin Aircraft near Baltimore, Maryland.
1940-41	Royal Barry Wills publishes *Houses for Good Living* and *Better Houses for Budgeteers.*
1942	Skidmore, Owings and Merrill plans defense-worker community at Oak Ridge, Tennessee.
1945-46	Publication of *Tomorrow's House: How to Build Your Post-War Home Now,* by George Nelson and Henry Wright; *The Small House of Tomorrow* by Paul R. Williams; *If You Want to Build a House* by Elizabeth B. Mock.
1945-66	*Arts & Architecture* publishes Case Study House series.
1946	*Sunset* Magazine publishes *Western Ranch Houses* featuring work of Cliff May, Doug Baylis and others.
	Movement to provide veterans' housing gains momentum especially in rental housing; Veterans' Emergency Housing Act of 1946 (60 Stat. 215) extends FHA authority to insure mortgages under Title VI. Elevator structures determined acceptable for FHA rental housing.
1947	Legislation to encourage private development of housing for veterans based on prefabrication methods in the form of short-term loans to housing manufacturers.
	Levitt and Sons builds first houses at Hempstead on Long Island, New York; Philip Klutznick forms American Community Builders to develop Park Forest, Illinois (planner Elbert Peets).
1947-50	Prefabricated homes made of porcelain-enameled steel panels manufactured by the Lustron Corporation (Carl Strandlund, manufacturer).
1948	Cameron Village Shopping Center, Raleigh, North Carolina, first large retail shopping center, planned by developer Wilke York, and site planner, Seward H. Mott.
1950	*Landscape for Living* by landscape architect Garrett Eckbo, published by *Architectural Record.*
1952-54	Northland Shopping Center, Detroit, Michigan, planned by Victor Gruen and Associates.
1953	Southdale Shopping Center, Minneapolis, Minnesota, first enclosed, climate-controlled mall designed by Victor Gruen.
1952-56	U.S. Gypsum Research Village in Barrington Woods, Illinois, showcases contemporary house designs.
1953	*Before You Buy A House* published by New York Architectural League and Southwest Research Institute, promoting modern principles of house design and the collaboration of architects and developers.
1955-56	Publication of Thomas Church's *Gardens Are for People: How to Plan for Outdoor Living;* Garrett Eckbo's *Art of Home Landscaping;* and *Sunset* Magazine's *Landscape for Western Living.*
1957	Hollin Hills, Alexandria, Virginia, selected as one of the "Ten Buildings in America's Future" in AIA Centennial Exhibition.
1957-58	Publication of A. Quincy Jones Jr., and Frederick E. Emmons's *Builders' Homes for Better Living* and Carl Koch's *At Home with Tomorrow.*



IDENTIFICATION, EVALUATION, DOCUMENTATION, AND REGISTRATION

Historic View (c. 1910) of the Prospect Park Subdivision, Pasadena, California, *shows how pioneers in California's Arts and Crafts movement transformed the dry and barren site along the Arroyo Seco into one of the region's earliest and most attractive planned suburbs. Historic photographs shape our understanding of past time and place. They enable surveyors to trace the evolution of a particular historic neighborhood, as well as visualize the ways that demographic trends, modes of transportation, and changing ideas about subdivision planning, house design, and gardening defined distinct stages of suburban growth and, in many places, have contributed to regional character. (Photo courtesy Pasadena Historical Society)*

IDENTIFICATION

Identification activities are designed to recognize properties associated with historic patterns of suburbanization and to gather information to determine the National Register eligibility of historic subdivisions and neighborhoods. The identification process calls for the development of a historic context at the local or metropolitan level and the documentation of associated properties using historical research methods and field survey techniques.

Contextual information on local patterns of suburbanization can guide survey work by providing a link between historic events and the physical evolution of communities. In turn, survey information expands the understanding of local patterns, adding to the local context information about the location, character, and condition of representative subdivisions and neighborhoods.

Information previously gathered through the statewide comprehensive survey and other historic contexts (local or state) should be supplemented by new research and field surveys that extend not only the geographical area covered by earlier surveys but also the chronological period considered historic. Keep in mind that the findings of earlier surveys and context statements may need to be reevaluated and updated according to new contextual information about historic patterns of suburbanization.

Publicly recorded plats *provide an abundance of information about local patterns of subdivision design and real estate practices. Designed by William H. Schuchardt in 1922 as an experimental housing cooperative of detached and semi-detached homes to ease Milwaukee's housing shortage, the Garden Homes Subdivision was replatted with subdivided lots in 1934 so that homes could be sold to tenants and stockholders when the cooperative was dissolved. (Historic plat by H. L. Lockhart, courtesy Wisconsin State Historical Society)*

DEVELOPING A LOCAL HISTORIC CONTEXT

The nationwide context, "The Suburbanization of Metropolitan Areas of the United States, 1830 to 1960," can be applied to the study of suburbanization on a local or metropolitan scale. In addition, a number of states have developed historic contexts and multiple property submissions that address various aspects of suburbanization (See Recommended Reading on pages 133–134 for a list of associated multiple property listings). Through historical research and field surveys, documentation is gathered to form a written statement of historic context, a master list of residential subdivisions, and one or a series of maps charting suburban growth of an entire metropolitan area or a single or small group of local communities within it.

Conducting Historical Research

Initially historical research is directed at gathering general information about metropolitan or local patterns of development, most importantly 1) demographic trends, 2) transportation systems and routes, 3) patterns of land development and subdivision design, and 4) trends in suburban housing and landscape design. Later, additional research in conjunction with field surveys may examine the history of specific neighborhoods.

Primary and secondary source materials—often available in local libraries, historical collections, and government offices—yield a wealth of information about local patterns of suburbanization as well as the history and development of local neighborhoods. Historic maps and subdivision plats should be identified early in the study. For a summary of source materials useful for developing contexts on suburbanization and documenting suburban neighborhoods, see Historical Sources for Researching Local Patterns of Suburbanization on pages 79–81.

Determining Geographical Scale and Chronological Periods

Demographic trends can help document the approximate growth and extent of local suburbanization and establish the periods of development associated with particular methods of transportation. From this data, predictions can be made about the types of suburbs likely to exist. For example, metropolitan areas in the eastern United States, which experienced rapid growth due to industrialization during the nineteenth century, likely contain the full spectrum of suburban properties. Those in the Midwest, which began to experience significant growth in the 1880s, would probably include streetcar, early automobile, and freeway suburbs; and western cities, which didn't expand until the twentieth century, can be expected to contain early automobile and postwar or freeway suburbs.

Using the date of legal incorporation for the central city as a starting point, researchers can make an initial estimate of the period of historic suburbanization by plotting a graph that compares the population growth of the central city to that of adjacent counties (or smaller jurisdictions if the data is available for them) in ten-year intervals through 1960, using data from the U.S. Census. Such a graph will indicate not only when and where suburbanization likely occurred but also the extent to which local patterns correspond to the broad chronological periods identified in the national context.

The metropolitan area is the most appropriate scale for studying patterns of suburbanization and establishing a local historic context. However, limitations of time and funding, as well as the difficulty of coordinating efforts among multiple governing jurisdictions (sometimes located in several states), may

make this approach impractical and make it necessary to establish a context for a single or small group of localities within the larger metropolitan area. In such cases, sufficient information should be gathered about metropolitan trends to explain how the history and development of the local community reflected patterns of suburbanization that shaped the metropolitan area as a whole.

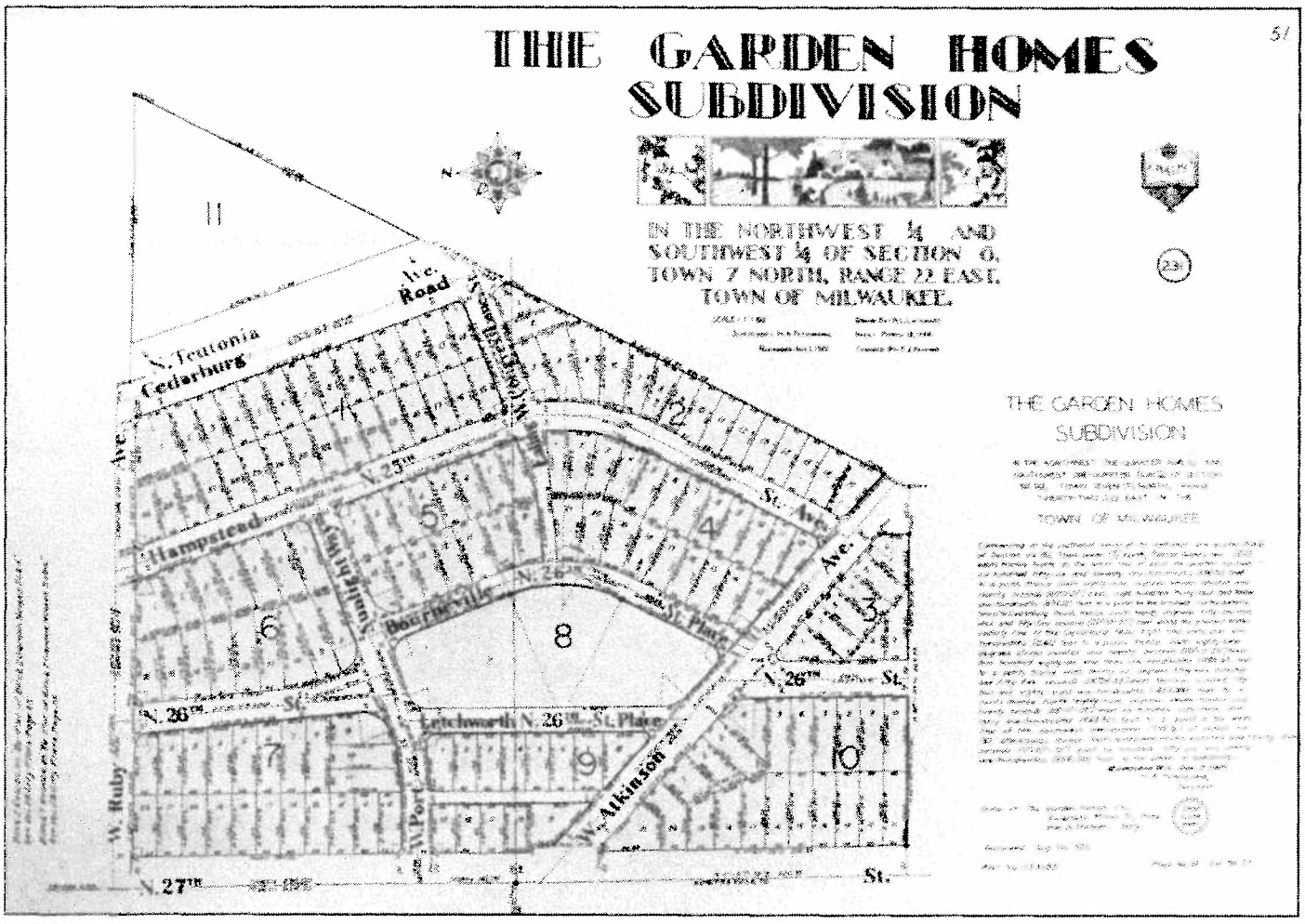
For research and survey purposes, a set of historic chronological periods should be defined that correspond to local events and stages of suburbanization. This can be done by dividing the history of local historic development into chronological periods that generally correspond to those outlined on pages 16–25, and assigning each period a set of dates based on local events, such as the introduction of the streetcar or the subdivision of the first automobile suburb. By comparing local trends in transportation, subdivision design, and housing design and construction to general national trends, researchers can make predictions about the types of subdivisions and suburban housing likely to be present in the local study area, as well as identify distinctive regional patterns.

Suburbanization has been an ongoing and continuous process in many communities. For this reason, it is important to use specific events and patterns in local history to define the beginning and closing dates for the overall "historic" period, as well as dates for chronologically-based property types. Approximate dates set at the beginning of the study can be revised later after research and field surveys have been completed to ensure accuracy. Actual events rather than an arbitrary 40- or 50-year cut-off should be used when examining patterns of suburbanization after World War II.

Compiling Data from Historic Maps and Plats

Historic maps are particularly useful for studying patterns of suburbanization because they graphically depict the relationship between transportation corridors and residential development. Those from the mid-1880s are particularly helpful in locating railroad suburbs, whereas maps dating from 1900 to 1920 are good indicators of the expansion of streetcar suburbs. Maps from the late 1930s to mid-1940s help trace the development associated with the early automobile period, and those from the late 1950s will help trace the massive suburbanization spurred by the expansion of arterial roads and freeways in the postwar period.

Because transportation methods and routes have historically defined the limits of suburbanization, a sequence of historic maps indicating



transportation routes should be assembled. The maps should represent dates far enough apart that they capture significant changes in the overall landscape. These maps can be compared to trace the relationship between transportation and subdivision development and determine the dates when major episodes of suburbanization occurred locally. Because little physical evidence of streetcar routes remains today, maps showing these routes are a key resource for identifying and verifying the presence of streetcar suburbs.

Historic plats provide an abundance of information about local real estate practices and patterns of subdivision design. They are also an invaluable tool in surveying historic neighborhoods and in evaluating significance and integrity. Plats typically indicate:

Figure 5.

Process for Identification, Evaluation, and Documentation

Identification

Step One: Develop local or metropolitan context on suburbanization

1. Conduct historical research.
2. Determine geographical scale and chronological periods.
3. Compile data from historic maps, plats, and other sources.
4. Prepare a written statement of context.

Step Two: Conduct field surveys of historic residential suburbs

1. Select appropriate survey forms.
2. Gather materials for field reference.
3. Conduct a reconnaissance or preliminary survey.
4. Analyze survey results and identify potentially eligible districts and properties.
5. Conduct an intensive-level survey of selected properties.

Evaluation

Step One: Define significance

1. Apply the National Register criteria.
2. Select areas of significance.
3. Define period of significance.

Step Two: Assess historic integrity

1. Apply seven qualities of integrity.
2. Identify changes and threat to integrity.
3. Classify contributing and noncontributing resources.
4. Weigh overall integrity.

Step Three: Select boundaries

1. Define the historic boundaries.
2. Decide what to include.
3. Select appropriate edges.

Documentation

Steps for Completing the National Register Multiple Property Form (NPS-10-900b)

1. Provide a statement of context.
2. Provide an analysis of property types.
3. Define registration requirements.
4. Explain methodology.
5. Provide bibliographical references.
6. Acquire official certification.

Steps for Completing the National Register Registration Form (NPS-10-900)

1. Describe historic district.
2. Provide a list of contributing resources.
3. Provide a statement explaining the local context.
4. Document the history of the district.
5. Explain how district meets National Register criteria and criteria considerations.
6. Provide bibliographical references.
7. Define and justify district boundaries.
8. Provide photographs and maps.
9. Acquire official certification.

Step Three: Follow registration procedures

1. Consult Federal regulations (36 CFR Part 60) for nominations.
2. Consult Federal regulations (36 CFR Part 63) for determinations of eligibility.

1) the date when a subdivision was platted;

2) original legal jurisdiction and boundaries of the subdivision;

3) name of the land development company or real estate developer responsible for subdividing the land;

4) original layout of the streets, utilities, and house lots; and

5) adjoining streets and arterials.

The requirements for recording plats vary from locality to locality. Researchers should make inquiries about local practices for both recording subdivision plats and for maintaining them as archival records. Plat books may be on file at the local courthouse or planning office. The search for historic plats may also involve contacting distant repositories, such as State historical societies or specialized archives housing the records of developers, site planners, or landscape architects. Research of fire insurance maps, recorded deeds, and written notices by land development companies may provide similar and additional information about community planning.

Mapping the Study Area: Information from the historic maps, plats, and other records can be used to prepare a map or series of maps charting the outward expansion of suburban development. Maps should indicate the name, date and location of railroad stations, streetcar routes, major arterial streets, parkways and boulevards, and highways, as well as principal land subdivisions. Reference copies should be prepared for field surveys so that the presence of resources can be verified and observations recorded about condition, boundaries, and potential eligible resources.

The best approach for graphically depicting the relationship between transportation and suburbanization is to begin with a current geographical map of the study area as a base map and create a series of overlays or period maps, each representing an important chronological period and showing the relationship of transportation facilities and subdivision development during that period. Such maps not only illustrate important aspects of the historic context, they also can be used to document multiple property listings, survey findings, and the evolution of large residential districts. Geographical Information Systems (GIS), Global Positioning Systems (GPS), and a number of softwares for mapping now make it possible to efficiently organize digitized information about residential development in the form of maps and comparative graphs.

Preparing a Master List of Residential Subdivisions: General street maps, local plats and planning documents, fire insurance maps, and transportation maps usually provide sufficient information to compile a master list of subdivisions for each chronological period. For survey purposes, the list should be cross-referenced to the field map and should provide the historic name, current name, dates of platting, as well as the names of real estate developers and designers, if known. Based on survey findings and additional research, the list can be further annotated to describe key characteristics such as size, street design, block size, number of lots, types of original improvements, periods of construction, house types, and condition. Many communities are now making tax assessment and planning information available online or on CD-ROM; such a readily available source of digitized data not only provides a wealth of information about residential subdivisions and local housing types, but can be used in a variety of ways, including maps and comparative graphs.

Developing a Statement of Context

The development of a local historic context requires information gathered through both historical research and field surveys. For this reason, the written statement should be developed in several stages. An initial statement based on research findings and previous surveys should be prepared before the reconnaissance survey begins. The findings of subsequent research and both reconnaissance and intensive-level surveys should be added at later stages. The final statement of context can be used in National Register nominations and multiple property listings, as well as State or locally published contexts and survey documents.

The statement should include a brief summary of the history of the metropolitan region and local community being studied and an explanation of the factors—geographical, legislative, and economic—that have influenced the growth and suburbanization of the region. In addition, the statement should explain the jurisdictional boundaries within the metropolitan region and identify the governing bodies historically responsible for local planning and development in the area being studied. It should contain dates, the proper names of influential individuals and organizations, and references to representative historic subdivisions and neighborhoods associated with the context.

Local contexts on suburbanization typically include information about the following:

- Transportation trends, including the location of railroad stations, streetcar routes, major arterial streets, parkways and boulevards, and express highways (freeways).
- Local events that reflect national trends in transportation, industry, commerce, and government.
- Local economic, demographic, and other factors that historically influenced the location and expansion of residential suburbs (e.g. rise of aerospace industry).
- Representative types of residential subdivisions and neighborhoods believed or known to exist in the study area, including the name, dates, and general characteristics of important examples.
- General types of single and multiple family housing that characterize the area's residential development, including their association with particular income levels, socioeconomic groups, industries, or local events.

- History of local or regional planning efforts, including the introduction of zoning ordinances, comprehensive planning, and subdivision regulations, which historically influenced patterns of suburbanization.
- Local practices concerning mapping, recording of subdivision plats, aerial surveys, and issuance of building permits, noting any particular records that are strong indicators of suburban growth and development.
- The ways that local patterns of suburbanization reflected changing views and attitudes about family, home, and the social roles of men and women.
- The ways local patterns of housing and subdivision design reflected national trends in architecture, landscape architecture, and community planning.
- Establishment and activities of local chapters of the National Association of Real Estate Boards, National Association of Home Builders, American Institute of Architects, American Society of Landscape Architects, American Civic Association, American Institute of City Planners, Better Homes of America, Inc., and Small House Architect's Service Bureau, including the names of members who were influential in shaping local patterns of suburbanization.
- Principal subdividers, home builders, real estate developers, and lending institutions, including a description of the types of residential and other development with which they were associated, and any distinctive local practices, such as the use of deed restrictions or development of neighborhood shopping centers.
- Principal site planners, architects, and landscape architects known for residential design in the local community or metropolitan area, including examples of their work, the housing types or characteristics of design for which they were known, and the identity of subdividers and builders with whom they routinely worked.

Local contexts *typically identify the general types of single and multiple family housing associated with particular socioeconomic groups, local industries, and stages of suburbanization. Three-deckers, also called triple-deckers, making up the Houghton Street Historic District (top) in Worcester, Massachusetts, represent a housing type common to the industrial cities of the Northeast where immigrants and others viewed renting out "flats" as a means of affording a home of their own. The Georgian Revival steel house (bottom) with garage located at 129 South Ridge is one of 22 homes constructed between 1932 and 1941 in Troy, Ohio, by the Troy-based Hobart Welded Steel House Company to demonstrate that arc-welding methods could be used to produce high quality prefabricated housing at a low cost. (Photo by Michael Steinitz, courtesy Massachusetts Historical Commission; photo by Diana Cornelisse, courtesy Ohio Historic Preservation Office)*

Figure 6.

Historical Sources for Researching Local Patterns of Suburbanization

The following historical sources are especially valuable in researching local patterns of suburbanization and the history of residential subdivisions. While many can be found in the collections of local or regional libraries, archives, and historical societies, others may be found among the public records of municipal and county governments. Some source materials are available on microfilm or CD-ROM and may be found in many research libraries.

- **Historic Maps and Atlases:** Historic maps indicating the growth and development of a metropolitan area at various intervals of time are especially valuable to chart the outward migration of residential subdivisions in relationship to advances in transportation technology and expansion of transportation routes. Maps were commonly published by streetcar and transit companies, oil companies, local chambers of commerce, highway departments, as well as local governments for tax and planning purposes.
- **Aerial Photographs:** After World War II, many local governments began making aerial surveys of their rapidly changing landscape; many of these remain among local government records. Beginning in the 1930s, the U.S. Department of Agriculture began making aerial surveys of rural areas of the United States for soil conservation purposes; these provide good coverage of the outlying areas of metropolitan cities that were later subject to residential development and are available on microfilm from the Cartographic Division of the National Archives. As part of the Global Land Information System (G.L.I.S.), the U.S.G.S. now makes available electronically the aerial photographs (called "digital orthophoto quadrangles," or "DOQs") taken to update digital line graphs and topographic maps.
- **Fire Insurance Maps:** Insurance maps, such as those compiled by the Sanborn Fire Insurance Company, are available in many local libraries and at the Library of Congress. Due to a major recording effort now underway, many Sanborn maps will soon be available on CD-ROM at major research libraries.
- **Local or County Ordinances:** These indicate the dates and provisions for local planning controls, such as zoning, subdivision regulations, comprehensive planning processes, local design review, and citizens' associations.
- **City, County and Regional Plans:** On file with local planning offices and available in local libraries and archives, these plans provide information about transportation routes, publicly funded improvements (e.g. utilities, water, sewer, mass transit), and overall plan of development that include distribution and density of land use activities, including residential development.
- **Subdivision Plats:** Local land records for a county, city or town, often organized chronologically in platbooks. While some older records of this type may be found in public libraries or historical collections, many remain among the public records of local courthouse or local planning offices. Also, copies may be found among the records of the architectural, planning, or development firms responsible for the design.
- **Building Permits/Tax Records:** These records frequently provide the names of site planners, architects, and developers and often indicate the dates and cost of original construction and additions. In many communities, tax assessment information is contained in a computerized database and is available on CD-ROM.
- **Deeds of Title, Mechanic Liens, and Real Estate Records:** Public court records indicate a property's chain of ownership and the terms of any deed restrictions. These are generally organized by date of recording and indexed by the names of sellers and purchasers. They may also indicate dates of construction and additions, original cost, source of mortgage, and identity of the subdivider or developer. Mechanics liens—temporary encumbrances on the title of property to ensure payment to the building contractor—may also identify the building contractors and indicate the cost of construction.
- **Building Contracts:** Found in private and public historical collections, the records of architectural firms, and, when a legal dispute arises, in court records. In States where the public recording of building contracts was required by statute, they may be found in courthouse records. In the form of a legal agreement between owner and contractor, they describe the property to be constructed, often specifying materials, workmanship, design, and other specifications. Purchase orders and bills of lading for building materials may also be found with these records.
- **Historic Photographs:** Photographs documenting the design, construction and daily life of residential suburbs exist in many local historic collections. These include family or community records; promotional or documentary materials used by realtors, developers and designers; and illustrations in historic newspapers, journals, magazines, and published portfolios. Although local historical collections may be the best place to locate historic photographs, specialized repositories may contain the work of local or regional architects, landscape architects, and photographic studios.

Figure 6, continued

- **Site Plans, Architectural Drawings, Construction Plans, and Planting Plans:** Available from the office of developer or architect, the archival repository for records of the architect, builder, or developer. Clearinghouse services, such as the Cooperative Preservation of Architectural Records (COPAR) and the Catalog of Landscape Records in the United States, provide researchers assistance in identifying repositories for the records of architectural firms and landscape designers. In addition, home owners may be in possession of promotional brochures, floorplans, and landscape plans for their yards. Promotional brochures and advertisements may also be found in community archives and local historical societies.
- **Historic Newspapers:** Advertisements in the real estate sections of local newspapers provide information about housing design, subdivisions, housing costs, prospective home owners, and availability of house financing. They are also a source of information about local events affecting suburbanization, such as industrial development, demographic trends, and expansion of transportation routes. Advertisements for merchants, suppliers, and contractors provide information about building materials and practices. Obituaries provide biographical information about architects, landscape architects, and real estate developers. Many local libraries maintain copies of local newspapers on microfilm. Many news publishers now offer archival indexing and assistance through the Internet; while these services are useful for locating recent obituaries or retrospective articles, few extend back far enough to locate original advertisements or features.
- **U.S. Census Records:** Census records provide demographic information about a subdivision or neighborhood, including the size of families, whether they own or rent their house, and the country of origin, education, occupation, and age of family members. The Census Bureau also gathers statistics on economics, housing, and population growth. Many census records are indexed and are available on microfilm from the National Archives (Record Group 29). Enumerative maps used by census takers are among the records of the Cartographic Division of the National Archives.
- **Oral History:** Interviews with original and early homeowners are a valuable source of oral history and may be recorded in audio-tape, videotape, or written transcripts. Such individuals may also own historic materials, such as promotional brochures, architectural drawings, landscape plans, nursery receipts, photographs, diaries and personal memoirs. Interviews with builders, contractors, developers, architects, landscape architects, planners, and former public officials may provide interesting insights into historic patterns of suburbanization.
- **Records of Neighborhood Associations:** Community newsletters, organizational minutes, correspondence, promotional brochures, anniversary publications, news clippings, early advertisements, neighborhood directories, historic photographs, and other information related to the history of a neighborhood. Records may be maintained by the organizations or may be on file in local library or historical collections.
- **City, Neighborhood, and Telephone Directories:** Available in local or regional libraries, historical societies, and community collections, these directories give the name and addresses of residents and their affiliated businesses as well as identify active merchants, suppliers of construction materials, designers, and contractors. Historic city directories for major cities are also available on microfilm in many libraries.
- **Records of Local Chapters:** Local chapters of professional and trade organizations should be contacted for information about historic events and the role of former members in the form of historic correspondence, official minutes, and newsletters. These include chapters of the AIA, ASLA, NCCP, NAHB, NAREB, as well as regionally based associations.
- **WPA Real Property Surveys.** During the 1930s many local governments, using Works Projects Administration (WPA) funds, compiled large-scale, city block maps that recorded information about real estate development and land use. The FHA used these maps to graphically illustrate statistical data on housing in metropolitan areas. Many of these maps are among the Records of the FHA (Record Group 31) in the Cartographic Division of the National Archives. Others may be on file in local libraries or archives.
- **Housing Market Analysis Maps:** Compiled by the FHA beginning in 1937, these maps indicated areas surrounding selected cities where it was considered safe to underwrite mortgages and were supplemented by data concerning commuting times, the location and condition of main highways, and the location of defense areas. These maps are among the Records of the FHA (Record Group 31) in the Cartographic Division of the National Archives.
- **Pattern Books, Mail Order Catalogs, and Landscape Guidebooks:** Sources of popular house and yard designs by architects, landscape architects, and mail-order companies such as Sears, Roebuck, Aladdin, and Van Tine. Many are available in libraries in the form of published reprints, microfilm, or CD-ROM, such as the microfiche edition of the Architectural

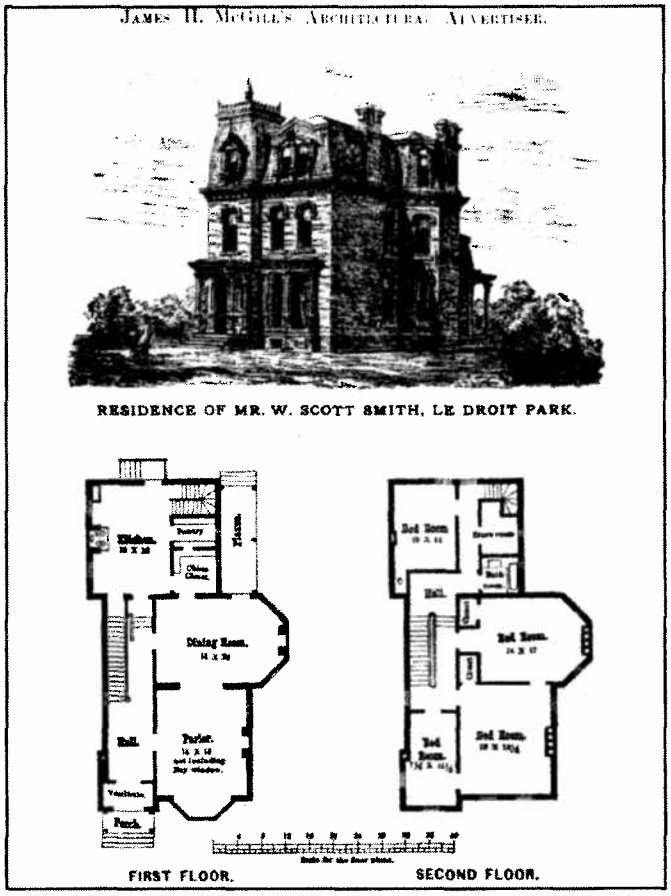
Trade Catalogs from the Columbia's Avery Library or the microfilm collection of American Architectural Books (New Haven: Research Publications).

- **Home and Garden Periodicals:** Popular trends in the design of house and yard, including new designs, alterations and additions, housing materials, gardening hints, and interior furnishings. Also a source for model house plans and garden layouts, as well as information about design awards and their recipients. Advertisements provide an excellent source of information on materials for remodelling and new construction. Many historic periodicals are available in libraries on microfilm or CD-ROM. *Garden and Forest* is now available on the website of the Library of Congress.
- **Trade Directories, Catalogs and Periodicals.** Source of advertising for building materials, plans, illustrations, and information about innovative techniques, new materials, and award-winning designs. Specialized libraries or archival collections may be the best source for these materials. A number of these, including *Sweets Architectural Trade Catalogs,* are available in libraries on microfilm or microfiche. Advertising circulars, such as Philadelphia's *Real Estate Reports and Building News,* contain references to local builders and architects and their ongoing projects. National directories include the *Blue Book of Major Home Builders,* which began publication in the mid-twentieth century.

For additional information about archival sources, readers should also refer to the National Register bulletins, *Guidelines for Local Surveys: A Basis for Preservation Planning* (rev. 1985) and *Researching a Historic Property* (rev. 1998).

***Page from architect James H. McGill's* Architectural Advertiser** *(1879) showing the Le Droit Park residence designed for Mr. Scott of Washington, D.C. Promotional brochures and advertisements are good sources of historical information and may be found in the collections of local libraries, historical societies, and community organizations. (Illustration courtesy District of Columbia State Historic Preservation Office)*

Photograph (c. 1898) of Shaw Avenue Place, *one of St. Louis's "private places." Historic photographs documenting the design, construction and daily life of residential suburbs exist in many local historical collections. (Photo courtesy Missouri Botanical Garden Archives)*



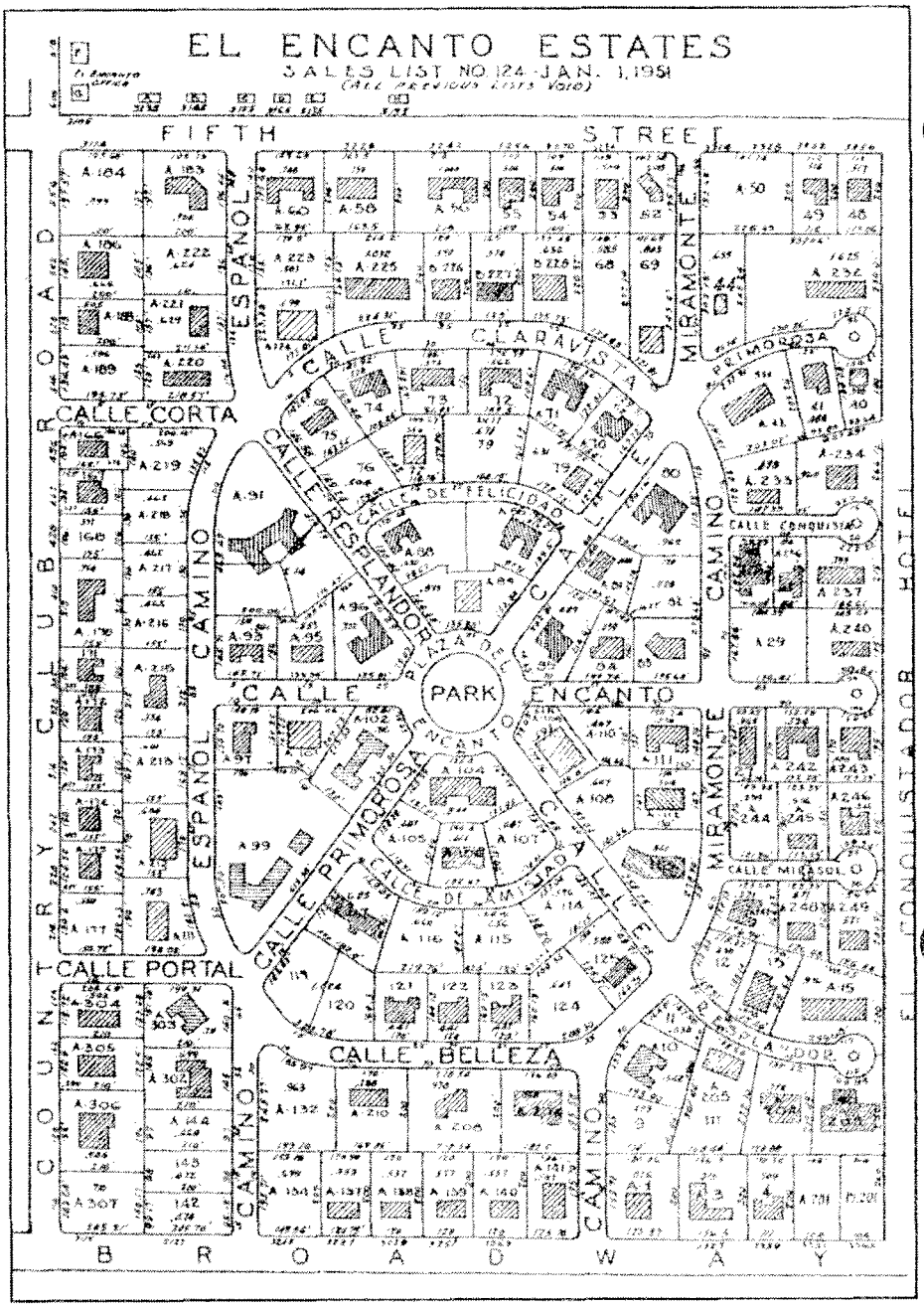
- Biographical sketches of 1) real estate developers known to have had substantial impact on local patterns of suburbanization, and 2) architects, landscape architects, and engineers who influenced the design and character of residential suburbs in the metropolitan area or local community, by introducing innovations in design, achieving work of high artistic quality, or establishing local traditions of design and construction.

Surveying Historic Residential Suburbs

Most historic resource surveys are conducted in two phases once background research has been completed. During the first, called the **reconnaissance survey**, the study area is surveyed to identify subdivisions and other property types illustrating local patterns of suburbanization. Observations are systematically recorded about the general character and condition of numerous subdivisions and neighborhoods.

During the second phase, called the **intensive-level survey**, more detailed information is gathered on one or more neighborhoods and other resources believed to meet the National Register criteria. Survey at this level proceeds with the purpose of verifying significance and integrity, establishing appropriate boundaries, and gathering sufficient documentation to complete a National Register nomination.

Because of their large size and great number, residential suburbs present a challenge to preservationists and decision makers. Field survey, data analysis, and reporting methods can be greatly facilitated through the use of an electronic database that can store, sort, and report data in a number of ways. The State historic preservation office or Certified Local Government should be contacted for guidelines about data entry and retrieval systems currently being used for the statewide comprehensive survey and acceptable formats for National Register nominations.



Survey Forms

Field observations, as well as facts gathered from historical research, should be recorded in a systematic and uniform way. Generally this is done on inventory forms provided by the State historic preservation office. The forms selected for use should be appropriate for the level of the survey and the types of historic properties likely to be found in the survey area.

During a reconnaissance survey, the use of a multi-structure or historic district form may be most useful for recording preliminary information about a subdivision, neighborhood, or streetscape cluster. For intensive survey, a more detailed district form may be needed, as well as individual structure forms to document the character and condition of individual buildings or groups of buildings having common characteristics. Since survey requirements vary from State to State,

An oasis in the desert, *Tucson's El Encanto Estates evolved from a geometrically perfect radial plan (1929) designed in the office of a California engineering firm and later laid out by field engineers on the floor of the Sonoran desert. A c. 1934 aerial photograph (above) depicts early improvements, including the layout of streets and spacious lots, rows of evenly-spaced street trees, and a central, circular park. A sales map (left) prepared in 1951 indicates the extent to which streets had been extended and lots further subdivided following World War II. Supplementing State survey forms, a horticultural inventory form was used to record information about the Mexican fan palms* (Washingtonia robusta) *and date palms* (Phoenix dactylifera) *lining the streets and the stately collection of giant saquaro* (Carnegiea gigantea) *gracing the central park. (Photo and sales map courtesy Arizona Historical Society Library/Tucson)*

surveyors should work out a plan with the State or local preservation office for making the best use of existing survey forms and deciding how additional information, such as street patterns or spatial organization, is to be collected. Some State programs use the National Register of Historic Places Registration Form (NPS 10-900) or a similar form for recording intensive-level survey data, including an inventory of contributing and noncontributing resources.[161]

Information needed to evaluate the significance of a particular residential subdivision or neighborhood depends to a large degree on the chronological period in which it developed and the historical factors that shaped it. Factors, such as the income level of prospective home owners, the relationship of subdivider and home builder, and methods of house construction, varied from period to period and frequently defined a neighborhood's physical character, as well as social history.

Survey techniques should be appropriate to the type of properties one expects to find. The forms used should enable surveyors to cross-reference property files and add fields or textual explanations to supplement the basic survey data. Since many survey forms currently in use do not record information about site planning or landscape design, decisions should be made before the survey begins on how information about spatial organization, circulation network, street plantings, and other landscape characteristics is to be recorded.

Field Reference Materials

The master list of residential subdivisions and the composite or overlay maps prepared for the local historic context (see page 77) serve as valuable reference materials during field survey. In addition, copies of the following documents will be useful:

- current street maps, planning maps, and U.S.G.S. quadrants;
- early transportation maps, indicating streetcar routes, parkways and boulevards, and highways;
- aerial photographs (dating back as early as the 1930s in some communities);
- historic subdivision plats;
- historic photographs and illustrations; and
- fire insurance maps, such as those produced by the Sanborn Fire Insurance Company.

Field reference materials should provide a level of detail appropriate for the type of survey being conducted. For example, historic plats and current planning maps showing principal streets, location and boundaries of residential land use, and principal topographic features, are useful for reconnaissance surveys, while tax parcel maps and Sanborn maps showing the size, shape, and location of individual house lots provide detailed information useful in intensive-level surveys.

The Reconnaissance Survey

Information gathered during the reconnaissance survey strengthens the local historic context, making it possible to identify locally significant property types and set registration requirements for National Register eligibility. The survey should result in an inventory of historic neighborhoods, subdivisions, and other resources that are potentially eligible for National Register listing. Survey results can be used to select the best approach for nominating eligible properties to the National Register and set priorities for local preservation planning.

Information collected should:

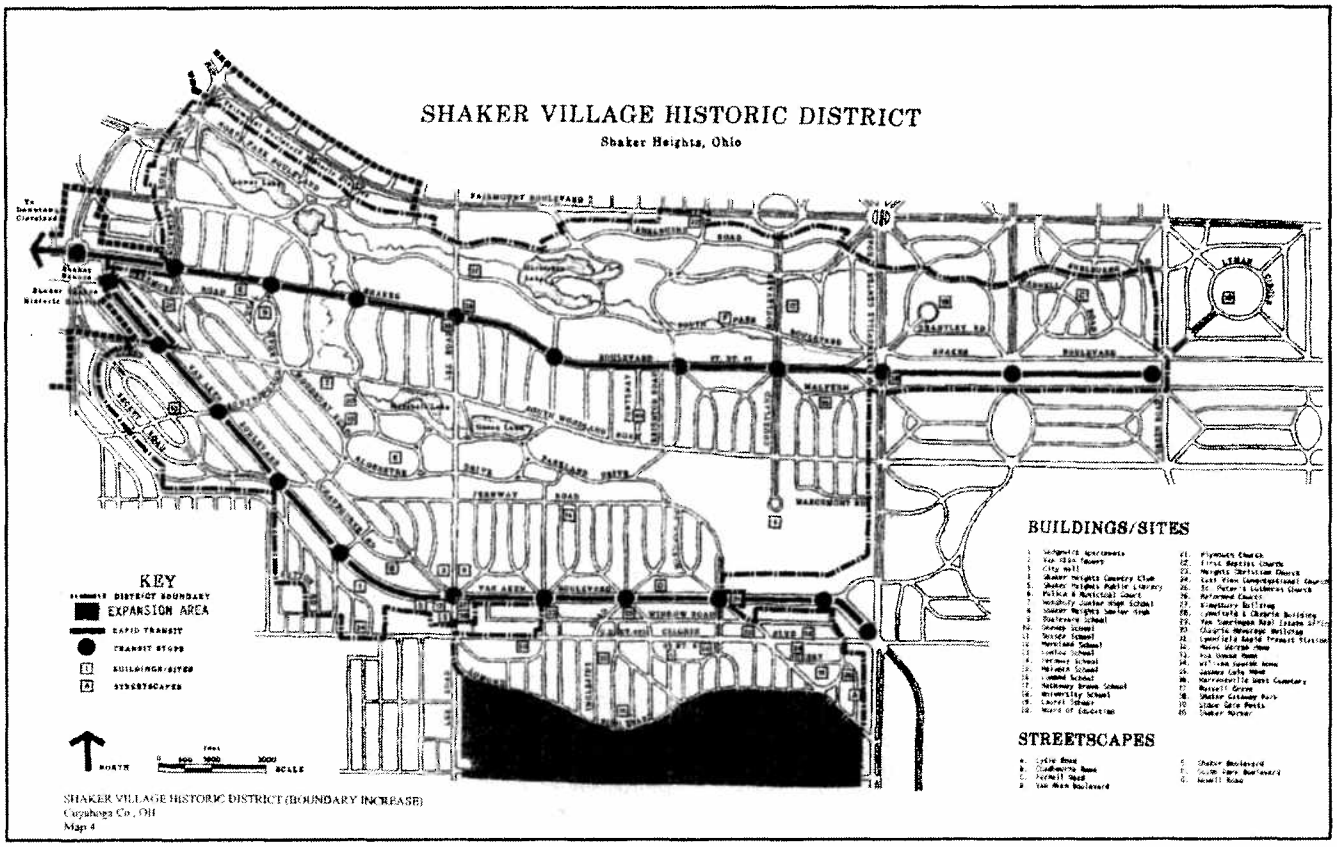
- Provide a general picture of the distribution of different kinds of subdivisions and house types in relationship to historic transportation routes.
- Verify, refine, and expand information gathered through literature and archival sources about patterns of suburbanization and the characteristics of historic suburbs in the local or metropolitan area.
- Provide enough information on the character and condition of specific neighborhoods to identify locally important property types, such as planned communities or apartment villages, and make recommendations on neighborhoods and other related resources that merit intensive-level survey and may be eligible for National Register listing.
- Provide an understanding of the factors that threaten the integrity of historic neighborhoods, and help establish a threshold for evaluating historic integrity of individual neighborhoods and determining general registration requirements.

During field work, surveyors should take special note of and record information about neighborhoods, as well as individual resources, which are likely to represent important property types and illustrate important aspects of the region's suburbanization. Such properties may include:

- residential subdivisions, or groups of contiguous subdivisions, that represent broad national trends in transportation, subdivision design, community planning, architecture, or landscape architecture;
- neighborhoods that possess historic associations with events or activities in the history of a local community or metropolitan area, or represent locally distinctive methods of construction or design characteristics;

Information about city planning, *including the development of transportation routes, helps surveyors trace the evolution of historic suburbs and determine appropriate boundaries for historic districts. A c. 1923 aerial view (left) depicts the infrastructure of electric streetcar lines and wide boulevards that, extending from downtown Cleveland, would spur the suburbanization of Shaker Village in coming decades. By the end of the 1920s, Moreland Circle (lower right of photo) would be transformed into Shaker Square, a commercial center and transportation hub for the rapidly growing suburb. By 1950, Shaker Village contained more than 4500 dwellings and apartment buildings in numerous subdivisions.*

A map of the Shaker Village Historic District *(below) indicates historic district boundaries, a complex pattern of neighborhood streets, and the rapid transit routes and major thoroughfares that continue to serve the historic district today. (Photo courtesy Western Reserve Historical Society; map courtesy Ohio Historic Preservation Office)*



SHAKER VILLAGE HISTORIC DISTRICT (BOUNDARY INCREASE)
Cuyahoga Co., OH
Map 4

Figure 7.

Guidelines for Surveying Historic Residential Suburbs

The following list should be used as a guide for gathering historical facts and recording field observations that can be used to expand the historic context and to identify National Register eligible properties. Characteristics or evidence noted during the reconnaissance survey should be documented during the intensive-level survey.

1. Relationship to transportation routes and other factors influencing location of subdivision

- Identify the modes of transportation that residents historically used to travel between home and work.
- Note the proximity to former streetcar routes and other transportation corridors, including ferry crossings, boulevards, parkways, major arterials, highways, railroad lines, bus routes, and subways.
- Mention common destinations for commuters other than the center city, for example, centers of defense industry.
- Mention other factors, including demographic patterns, politics, economics, and natural topography, that influenced the subdivision's location and design.

2. Site plan and subdivision design

- Date and describe the subdivision plan, including the date of plat, boundaries, location, approximate size (acreage and/or number of blocks), the approximate number and type of streets (curvilinear or rectilinear), the provision for pedestrian walkways or sidewalks, overall density, and general lot size.
- Identify the developer, site planner, or engineer responsible for the subdivision design. Note any indications that the plan resulted from the collaboration of designers from different fields.
- Describe the circulation network, indicating whether the street pattern is rectilinear or curvilinear and whether it follows the urban gridiron plan or natural topography. Indicate whether a hierarchy of roads is evident (from wide collector streets to narrow cul-de-sacs), noting the presence of entrances, wide collector streets, side streets, courts and cul-de-sacs, circles, and peripheral arterial streets.
- Note evidence of established principles of landscape design or important trends in community planning (e.g., radial plans with circles and circular drives indicating the influence of City Beautiful movement or curvilinear streets and cul-de-sacs characteristic of FHA standards).
- Describe the nature and location of improvements made by the subdivider (e.g. utilities, paved roads, public parks, and reservoirs). Indicate physical evidence of the use of deed restrictions (e.g., mandatory setbacks, uniformity of housing type).
- Note variations between the subdivision plan as drawn on the plat and as carried out. Note any evidence indicating that subdivision was developed in distinct stages (e.g. noticeable changes in street design or house types).
- Describe major alterations since the historic period, including street closures or widenings, consolidation of lots, out-of-scale additions, further subdivision of lots (infill), and new land uses or incompatible activities.

3. Character and condition of housing

Because great variation exists in house types, surveyors should make detailed observations and photographs making sure that information is gathered on the types of housing associated with all social groups and income levels historically associated with local history and development. Although published style guides are useful for describing general housing styles and types, surveyors should look for local and regional variations and confirm dates of construction using local records. Surveyors should also consider the influence of local firms of small house architects, FHA standards, local home building practices, and availability of ready-cut houses in examining house types.

- Describe the general pattern of housing (dwelling types, chronological distribution, sources of design and construction, building materials, and income range).
- Indicate the approximate number of dwellings, noting whether they are single-family (detached) houses, multiple family (attached and semi-detached) units, or a combination of the two.
- Describe the architectural styles and types represented by the dwellings and garages, noting similarities and variations that reflect the relationship between a developer and builder or exhibit characteristics of a particular period or method of construction.
- Identify architects and home builders responsible for the design of houses.
- Estimate the approximate span of years represented by housing types, noting the character of predominant or distinctive house types and styles. Describe the various periods of construction and provide a general chronology of housing types from the earliest to most recent types. (More accurate dates can be added during intensive-level survey). Note evidence of gaps and changes in construction due to events such as the Great Depression, World War II, bankruptcies, or changing ownership.

- Note distinctive aspects of design and construction, such as materials, size, elements of architectural style, use of prefabricated components, provision for scenic views, and relationship between house and its setting.
- Indicate if housing collectively serves an important design element (e.g., through common set backs or architectural materials, giving the neighborhood a cohesive yet varied character).
- Describe the general condition of housing, including the nature of alterations to individual homes (houses and lots)—e.g., siding, raised roofs, enclosure of carports, construction of garages and additions, changes to windows (materials and fenestration), porch enclosures, and addition of porches, dormers, and nonhistoric garages.

4. Distinctive aspects of landscape design

Field observations are often the best source of information about street plantings, yard design, and the relationship between a subdivision plat and natural topography. Adherence to principles of landscape design may be evident through the careful arrangement of streets to follow the natural topography, an irregular artistic division of land into house lots, the provision of parks and parkways to accommodate water drainage as well as enhance the neighborhood's beauty, and the presence of a unifying program of landscape plantings. These characteristics help identify subdivisions that may be the work of established masters of design or have high artistic values and, therefore, merit further study and contextual development.

- Describe the relationship of street design and overall site plan to the natural topography, noting distinctive street patterns, the way site is divided into house lots, and provisions for site drainage and parks.
- Describe elements of landscape design seen in entrance ways, street plantings, boundary demarcations, recessed roadways, treatment of corner lots, traffic circles, historic gardens, and the grading of community facilities.
- Identify principal types of vegetation, noting distinctive patterns such as use of ornamental or shade trees, shrubbery, and specimen trees. Indicate principal species using common, and, if known, Latin names. Although plants and trees are best identified during seasonal displays of flowers or foliage, they can be recognized at other times of the year by their bark and fruit.
- Note evidence of deed restrictions seen in uniform setbacks, similarity of architectural style, and open, unfenced yards.
- Describe distinctive materials and evidence of workmanship in entrance signs or portals, ornamental plantings, curbs, bridges, gutters, walls, and walkways.
- Note distinctive features associated with utilities and street improvements, including lighting, absence or presence of telephone poles and power lines, reservoirs and water towers, sewer, curbs, sidewalks, gutters.
- Describe the general size of lots and the placement of houses on each lot, including the arrangement of corner lots.
- Note whether streetscapes have uniform setbacks, form a regular or irregular pattern, or exhibit striking vistas.
- Describe distinctive patterns of yard design: open lawns, perimeter fences or hedges, stairways and walls, patios and outdoor terraces, gardens, specimen plants, and foundation plantings.

5. Presence of community facilities, such as schools and stores.

- Describe and date community buildings, shopping areas, parks, civic centers, club houses, country clubs, schools, and other facilities that were built within or adjoining the neighborhood.
- Explain whether these facilities were part of the neighborhood's original design, and describe how they served and supported suburban life.
- Note any distinctive elements of design present in the architectural styles, landscape design, or methods of construction, and identify architects or landscape designers responsible for their design.

6. Patterns of social history

- Provide a general profile of original or early home owners, noting typical occupations, income group, and ethnic or racial associations. (Keeping in mind that prior to the end of the 1940s, deed restrictions were often used to exclude residents on the basis of income, profession, race, and religion.)
- Mention the presence of a citizens' association and established community traditions.
- Note whether or not the subdivision is part of a larger historic neighborhood, and define the characteristics that link it to the larger area.
- Name local industries or institutions (such as colleges or defense plants) that created demand for housing.
- Note changing patterns of ownership, indicating approximate dates of general trends and describing the effects of change on the physical character and social history of the neighborhood.
- Note possible significance in social history and suggest directions for further research, such as oral history and or the review of community held records.

- clusters or streetscapes having historic values, associations, or design characteristics that distinguish them from the larger subdivision of which they were originally a part;
- single homes associated with persons important in our past or distinctive for their architectural design or method of construction, or as the work of a master;
- and community centers, schools, and shopping centers within or adjacent to a residential neighborhood which are associated with important historic events or possess architectural distinction.

While the residential subdivision is the focus of survey activities, historic neighborhoods may extend beyond the boundaries of a single subdivision. Historic associations or physical characteristics linking these areas should be documented and considered in making recommendations about their collective significance or National Register eligibility. Conversely, where a historically important neighborhood no longer possesses historic integrity in its entirety, a smaller area retaining significant qualities and associations may be eligible. Individually eligible resources associated with the suburbanization context but located outside the boundaries of a potentially eligible historic district should also be identified.

Organizing an Itinerary

Organize an automobile **itinerary** that follows historic transportation routes as closely as possible, directing surveyors from the oldest to the newest subdivisions so they can gain a sense of the range of variation that occurred in housing types and subdivision design throughout the community's history.

Because the boundaries of historic subdivisions are often invisible in the field and may not be evident on contemporary street maps, it is a good idea to have copies of historic maps, plats, and aerial photographs, as well as the composite map or series of overlay maps prepared for the historic context. This is especially important when surveying older suburbs where housing was built in small subdivisions by a variety of builders, often following the rectilinear urban grid, and where subdivision boundaries are not necessarily signaled by changes in architectural style, housing type, or street design.

Recording Field Observations

Following the itinerary and using current and historic street maps as a guide, proceed in two stages. First, drive through as many subdivisions as possible making general notes and taking photographs. Second, for each major subdivision, neighborhood, or distinctive cluster, record field observations incorporating information gathered from maps, plats, and other field reference materials.

Surveyors should be prepared to take photographs, annotate field maps, and complete survey forms as they proceed through each subdivision. It is important to note the presence of distinctive features of architecture, landscape design, and community planning that might be attributes of historic significance and should receive further documentation during an intensive survey. This includes unusual house types, distinctive architectural types, characteristic streetscapes, evidence of professional principles of landscape design, important vernacular trends in housing or yard design, or highly distinctive site plans. Similarly, note interesting historical associations or observations on community life, such as annual traditions, the role of a citizens' association, or the presence of a community center.

One can expect to find a huge variation in the size and design of neighborhoods. Those subdivided before World War II may be relatively small in size, often consisting of little more than a single, rectilinear street with a handful of rectangular lots to either side. In these cases it may be useful to develop a system of classifying such subdivisions by attributes—such as street pattern or architectural variety—to define local patterns and establish a set of local property types, or to look for common characteristics that link subdivisions into larger historic neighborhoods.

Analyzing Survey Results

Survey data should be incorporated into the written statement of context, and connections made between broad patterns of local suburbanization and the development of specific suburbs and neighborhoods. At this point, the master list of subdivisions can be annotated to include information about developers, builders, architects, site planners, and other designers and to note important events in social history that illustrate locally important themes or trends. Also, note the condition of specific subdivisions and the general nature of changes that each area has undergone since the end of the historic period.

Information about distinctive characteristics of site planning, housing, or landscape design should be used to define significant local patterns, to document the work of important designers, and to identify properties that should be more closely examined for significance in architecture, landscape architecture, or community planning during the intensive survey. Likewise, information about events in the neighborhood's cultural or social history should be used to identify neighborhoods associated with significant patterns of community life and social change. Survey information about condition of local residential suburbs and housing types will help establish thresholds for evaluating historic integrity in the local area.

From this synthesis, it is possible to 1) define the set of locally important property types, 2) formulate registration requirements for National Register listing, and 3) compile a list of subdivisions, neighborhoods and other properties that appear eligible for the National Register and merit intensive-level survey.

Analysis of survey data will also suggest areas of further research, appropriate research methods, and special concerns for significance or integrity. For example, observations about the range of housing types may suggest clues about the relationship of subdividers and builders, the period of development, sources of design, and use of restrictive deeds, which can be

substantiated through further research conducted during the intensive-level survey. The presence of original home owners or an active neighborhood organization may indicate opportunities for conducting oral history or viewing community records.

Identifying Significant Patterns of Development

While the significance of a residential suburb depends to a large degree on the local or regional context, the following characteristics generally indicate aspects of a neighborhood's history that may reflect important local or metropolitan trends and should receive further study through an intensive-level survey to verify National Register eligibility.

- The neighborhood's planning and construction related to the expansion of local industry, wartime industry, important stages in metropolitan development, or broad national trends such as returning GI's, the Better Homes movement, and the bungalow craze.
- The neighborhood—through its site plan, overall landscape design, and house design—reflects historic principles of design or achieved high artistic quality in the areas of community planning, landscape architecture, or architecture.
- The subdivider and site planners responsible for the platting and construction of the subdivision figured prominently in the suburban development of the locality or region and made substantial contributions to its character and the availability of housing.
- The neighborhood's design represents the work of one or more established professional designers—site planners, landscape architects, architects, or engineers.
- The subdivision design resulted from the collaboration of professionals representing several fields of design, such as landscape architecture and architecture.
- The neighborhood exemplifies the role that a certain type of developer (subdivider, home builder, community builder, operative builder, or merchant builder) played in the growth and development of the locality or metropolitan region.
- The neighborhood was designed to conform to FHA-standards and represents one of the "earliest," "most successful," "largest," "finest," or "most influential" examples locally.
- Historic neighborhoods possessing a high degree of integrity and exhibiting distinctive elements of design in the subdivision plan, landscape architecture, or domestic architecture.
- Historic neighborhoods reflecting important advances, established principles, or popular trends in community planning or landscape architecture.
- Neighborhoods containing homes in a variety of period styles, or representing the work of one or a number of noted architects.
- Neighborhoods whose housing represents one or more locally important housing types (e.g., bungalows and foursquares).
- Residential neighborhoods associated with important local industries or local events and activities that are known to have stimulated suburban growth and development.
- Neighborhoods historically associated with important events in the Civil Rights movement to provide equal access to housing.
- Neighborhoods associated with important patterns of ethnic settlement that contributed to local growth and development.
- Neighborhoods with homes that received recognition or awards from professional organizations, trade organizations, architectural journals, popular magazines, or housing research foundations.
- Neighborhoods that introduced or established patterns of subdivision design, housing, financing, or building practices that became influential in the local community, metropolitan area, or elsewhere.

Conducting an Intensive-Level Survey and Compiling National Register Documentation

Intensive-level survey provides a comprehensive study of selected neighborhoods and gathers the detailed information necessary to document properties for National Register listing and make determinations of eligibility. Building upon the general observations made during the reconnaissance survey, the intensive-level survey provides detailed, factual information about the history and physical evolution of one or more subdivisions or neighborhoods believed to be eligible for National Register listing.

The intensive survey closely examines the neighborhood's historic significance, integrity, and boundaries, firmly establishing its place within the local historical context. Survey at this level gathers sufficient information to confirm National Register eligibility and to document the property according to National Register standards.

Documenting the Physical Evolution of a Historic Residential Suburb

During intensive-level survey, additional field observations and research provide an indepth record of the current character and condition of a historic neighborhood and document its physical evolution and history. The guidelines on pages 86–87 list the information that should be gathered during the intensive-level survey and reported on the National Register registration form.

Several historical documents provide valuable comparative data for tracing the physical evolution of a historic neighborhood. A comparison of the neighborhood as it exists today and the original plat helps determine the extent to which the plan was carried out and the periods of time when housing was constructed. Such a comparison will also help determine whether the neighborhood was developed by a subdivider, who consequently sold unbuilt lots to builders, or, by a community builder, who not only sold lots but also supervised the construction of houses.

Streetscapes of the Cameron Park Historic District, *Raleigh, North Carolina, one of three large subdivisions platted c. 1910 during an extensive period of urban growth. Neighborhoods were nominated to the National Register through a survey of the city's historic residential neighborhoods, which included the development of a historic context documenting local patterns of suburbanization. These efforts resulted in a multiple property submission entitled Early Twentieth Century Raleigh Neighborhoods. Due to the extremely large study area and predominance of residential resources, surveyors systematically proceeded from the city's oldest sections to newer ones recording block faces on multiple structures forms that were later grouped together by subdivision and cross-referenced to files on selected individual properties. (Photos by Diane Filipowicz, courtesy North Carolina Department of Cultural Resources)*

Historic photographs, illustrations, maps and aerial photographs also reveal changes. In addition, fire insurance maps, such as Sanborn Fire Insurance Company maps, drawn soon after the completion of the subdivision, can be compared with more recent maps to identify later construction. Recorded deeds and sometimes tax records provide reliable dates of construction, which can be used to create a series of period maps showing the neighborhood's evolution.

During the intensive-level survey, it is important to document the physical evolution of the neighborhood, identifying who was responsible for the subdivision plan as well as the design of houses and landscape features. This means:

- Determining which profile of developer (e.g. subdivider, home builder, community builder, operative builder, or merchant builder) the developer most closely fits.
- Explaining the relationship between the developer and any site planners, architects, landscape architects, engineers, and home builders who contributed to the design of the neighborhood.
- Documenting the specific contributions of each professional group and of individual designers collaborating on the neighborhood's design.
- Providing documentary evidence that deed restrictions were used, mentioning specific provisions of such restrictions and explaining how they influenced the character of the subdivision.
- Indicating whether the original developer remained in charge of executing the plan and, if not, describing any major changes made by subsequent developers.

Classifying House Types for Inventory Purposes

An intensive survey of one or more residential suburbs often covers an area of considerable extent and literally hundreds of houses and other resources. Decisions need to be made about how houses and streetscapes can be surveyed most efficiently so that determinations can be made about district boundaries and the classification of contributing and noncontributing resources. Sufficient information should be drawn from the reconnaissance survey to determine whether a building-by-building survey is needed or whether there are sufficient similarities of construction and design so that resources can be grouped in categories based on common housing types. Such a typology can then be used to define significant patterns as well as facilitate the collection of information about condition and integrity which is needed to complete the building-by-building inventory of contributing and noncontributing resources.

Many subdivisions, especially during and after World War II, offered prospective owners a limited number of house types, sometimes being distinguished only by the number of rooms, roof design, or exterior wall materials. For this reason, when conducting an intensive survey in a neighborhood of similarly-designed houses, perhaps designed by a single architect and constructed by a single builder, it makes sense to classify houses or housing units by type and provide a general description of each type. An inventory can be compiled by listing each house by street address or building number and indicating its type according to the general classification scheme and noting its condition, any major alterations or additions, and status as contributing or noncontributing.

For example, in an FHA-approved neighborhood having a dozen house types, the description of House Type 2-B might read:

> House Type 2-B is a six-room, two-story hipped roof variation of the standard 1144 square foot home whose lower-story is clad with painted brick and upper story wooden clapboard. The house originally featured metal casement windows, a side porch, and a side chimney. A pedimented doorway, paneled door, and a moulded entablature reflect minimal Colonial Revival styling.

An inventory entry for one such house could then read:

> 1212 Columbus Street, an example of Type 2-B, having an enclosed porch, matching aluminum siding over wooden clapboards on upper story, and replacement double-hung, vinyl windows on principal facades. Otherwise house is in good condition. Contributing.

For more information on documenting historic suburbs, refer to the Documentation and Registration section on pages 108–111 and the National Register bulletin, *How to Complete the National Register Registration Form.*

EVALUATION

The evaluation process entails three major activities: defining significance, assessing historic integrity, and selecting boundaries. Information gathered during the intensive survey about the history and condition of a neighborhood is related to the historic patterns of suburbanization that shaped the locality or metropolitan area where it is located. Ultimately the evaluation process verifies whether or not a property meets the National Register criteria for evaluation and is eligible for National Register listing.

The written statement of historic context—containing information about the local or metropolitan patterns of transportation, subdivision design, and housing—makes it possible to determine the extent to which a neighborhood represents local or regional patterns and is associated with important events, activities, or persons that contributed in important ways to the growth and development of the community. The reconnaissance survey, furthermore, provides comparative information about the condition of historic neighborhoods and subdivisions, enabling researchers to eliminate from further consideration those that have lost their historic integrity.