by the assessed value of land and buildings. The value of land may increase. The value of physical improvements, on the other hand, depreciates with age and use. At the same time the cost of public services increases as physical deterioration continues. Yet the present assessment of taxation actually works in reverse of this: *tax revenue goes down as the cost of urban maintenance goes up.*[21]

It would seem that a great many factors of different kinds work together to accelerate the process of obsolescence of buildings. This is especially true of housing, which is the category including the great majority of the nation's buildings. The process and the trends are nationwide. They acquire a special urgency in Megalopolis because the higher density of settlement creates more pressure on the land, increases distances between places of residence and of work, and therefore raises problems of transportation and access to the hubs of crowding.

The speed of the process of obsolescence and the number and variety of the forces favoring its accelerated development point to a massive phenomenon of considerable significance not only for land use and urban planning but also for the national economy as a whole. The real estate market and the construction and transportation industries are deeply affected by the trends that speed up the obsolescence of housing; for speeding up obsolescence, in a society that likes comfort, wishes to be up to date, and has both the means and the will to drive toward these targets, means accelerating urban redevelopment and renewal, suburban sprawl, highway building, and so forth.

A group of distinguished city planners and architects, gathered to discuss with this writer the obsolescence of housing,[22] overwhelmingly expressed the opinion that gadgets, materials used in construction, and other technological changes were not essential in determining the rapid pace of obsolescence. Basic to the process was the *mobility of the American people,* their social fluidity that constantly modifies the character of neighborhoods, their desire for change, improvements, and new experimentation. It seems likely indeed that none of the factors of obsolescence could have developed to the extent now observed had the users of the buildings opposed all this change, so enormous in amount and so rapid that it seems almost incredible by the standards of any other nation.

Had Americans really cared for staying where they lived, they would have found means of maintaining their houses well enough, of rejuvenating and equipping them, of maintaining the social standing of their neighborhoods, in order to avoid undesirable obsolescence and the ensuing mobility. But to most of them, moving was a good and easy solution. Their acceptance of mobility made for more slums and blight in the central cities, but also for more newly built suburbs, and in the final analysis, for more renewal in the old urban cores. It helped the construction industry to expand, real estate speculation to develop, and more space beyond the old city limits to be occupied by urban uses. These trends have for long been familiar to urbanites in Megalopolis, many of whom move to a new home every time the old one needs a new coat of paint.

[21] *Ibid.*, p. 368.

[22] This meeting, kindly organized at our request by the School of Architecture of Princeton University, took place on December 1, 1958, at Princeton under the guidance of Professor Robert McLaughlin, Director of the School.

Redevelopment, Renewal, and Relocation in Urban Areas

The constant migrations within, around, and between the old urban cores of Megalopolis have caused much change and much new building throughout the region, especially in its axial belt. For a long time urban growth in Megalopolis could proceed through expansion in space. On the one hand the "downtown" districts expanded because of the development of commercial, industrial, and, in a few cities, governmental activities, and the additional ground needed was usually acquired partly at the expense of the neighboring residential sectors and partly at the periphery, on suburban land. On the other hand, the "uptown" districts expanded because of the sustained rise in the number of residents, and most of the necessary ground was obtained on the periphery or even at some distance from the old core at the expense of farms, woods, or sparsely settled suburban areas.

In the past this process went on smoothly without greatly disturbing the standing buildings of the urban core, except for the erection of new office or industrial structures in certain locations, and on the whole these occupied relatively little acreage. A good part of the process consisted in a change of residents in the older houses. Those who had lived in them moved out to the newly built sections of the city or to suburbs, and their places were taken by newcomers with lower incomes: immigrants from abroad or in-migrants who belonged to the poorer strata of the population, especially Negroes. A few residential sections located close to the business districts usually succeeded, especially in the larger cities, in preserving the quality of the neighborhood and of the housing at a high cost, and kept undesirable newcomers out just by pricing themselves far above their reach. Thus we find the Fifth Avenue–Park Avenue section between 60th and 96th streets in Manhattan, or the section of "Embassy Row" centered on Massachusetts Avenue above 16th

Street N. W. in Washington, and smaller but no less restricted districts in Philadelphia, Boston, and Baltimore. Elsewhere the process of obsolescence went on until more and more of the residential sections in the older parts of the cities, close to downtown, became actual slums.

In the larger cities there were, however, enough wealthy residents and enough attraction to the business activities of downtown to cause certain sectors to be well defended, as has already been indicated, and others were rehabilitated or even rebuilt in order to attract the kind of residents who were willing to pay adequate rents and live in high-rise apartment buildings, and who valued locations with convenient access to their places of work and to the social and recreational resources of the central cores of the great cities. Such resources are obviously much more limited in the medium-sized central cities and in small industrial cities, and the power of attraction for the higher-income residents of urban nuclei outside the five great cities in Megalopolis is very small. As a result obsolescence and relative decline of housing in the cores have been more rapid and have caused more obvious changes in the smaller cities than in the five larger ones.

A city, it has often been observed, is a dynamic organization – always changing, always in transition. In Megalopolis we could add that it is always growing. In the past the growing population made good use of relatively obsolete structures; but newcomers in search of work and economic opportunity opened the door to the spread of blight and slums in the hearts of the central cities. Although the statistics and maps analyzed earlier in this chapter seemed to point to a relatively favorable condition of housing on the *average* in Megalopolis, and though in the 1950's overcrowded and blighted buildings were occupied by only a minority of the population, it must still be realized that a "small minority" out of more than 37 million people meant *several million persons living in substandard and sometimes slum conditions* of housing within the region.

As long as the recently arrived immigrants were rapidly improving their lot and moving up, at least with every generation, in social and economic standing, the dynamics of housing and land use remained in a certain traditional framework, full of promise and progress within the city. In recent years the process has been somewhat modified, for the inflow of immigrants from abroad has been reduced to a trickle, and increasingly these aliens are not poor but are highly skilled professionals assured of making an adequate income within a short time. Some of the in-migrants from other parts of the country are of this type too, lured to Megalopolis by higher profits, wages, and prestige. The great majority

of the newcomers, however, are Negroes and Puerto Ricans, who still belong definitely in the lower-income brackets. They find it doubly difficult to secure good housing, not only because of the cost but also because they are restricted in space by racial discrimination.

A new problem, the result of social opposition and too-sharp economic contrasts, has arisen in the larger cities. Middle-income families, especially those with small children, have found themselves caught between two advancing fronts: more expensive new housing on the one hand, and on the other the rapidly worsening housing in the areas toward which Negro or Puerto Rican settlement is moving. Most of these medium-income families have chosen to move out toward the suburbs and even farther away. The sharpening contrast in Manhattan between Harlem and the richer Upper East Side and similar situations in Washington, Boston, and Baltimore cause local and national concern.[23] At the same time the smaller cities of Megalopolis have decayed more rapidly, and the average income of their residents has declined in both absolute and relative terms, in contrast to a general rise throughout the region and the nation. In 1958, at a forum conducted by the National Health Council in Philadelphia, a distinguished expert in urban problems could ask the question: "Will the central city be left with a population consisting of the lame, the halt and the blind, the poor, the aged and the minority group?" [24]

This was a threatening but a deliberately pessimistic way to formulate

[23] A few statistics showing the distribution of lower and higher incomes in and around the major cities reveal these trends convincingly. *The County and City Data Book: 1952* (U. S. Bureau of the Census, U. S. Government Printing Office, Washington, D. C., 1953) reports Bureau of the Census figures for the 1949 incomes of all families living in specified areas in 1950, and these show that in central cities of Megalopolis the wealthier group (incomes of $5,000 or more) and the poorer group (incomes of less than $2,000) were relatively large and more or less equal in size, while in the suburbs the wealthier category was much larger and the poorer category smaller. For the New York City area, the two groups made up the following percentages: Manhattan, 24.7 and 27.1; the Bronx, 27.6 and 17.4; Brooklyn, 25.7 and 19.7; Queens, 36.0 and 12.5; Westchester County, New York, 42.2 and 13.2; Nassau County, New York 43.8 and 10.5; Bergen County, New Jersey, 39.2 and 10.9. Note that the outer boroughs of New York City represent a condition transitional between the core city and the adjacent suburbs. In the District of Columbia the percentages were 34.6 and 17.6, while in Fairfax County, Virginia, they were 39.0 and 14.9 and in Montgomery County, Maryland, they were 53.3 and 10.3. In Baltimore City the percentages were 23.1 and 22.7, but in Baltimore County they were 27.1 and 14.3. Philadelphia had 22.9 and 21.6 per cent for the two groups, and adjacent Camden County, New Jersey, had 25.9 and 17.5. Boston (Suffolk County, Massachusetts) had 20.9 and 21.0 per cent, and adjacent Middlesex County had 26.7 and 16.5.

[24] William C. Wheaton, "How Far Will Our Central Cities Slide?," in *Urban Sprawl and Health* (Report of the National Health Forum) National Health Council, New York, January 1959, p. 175.

the problem. The outcry has been general, however, among experts concerned with recent trends, in an effort to warn of the need for action to obtain better redevelopment and renewal than have yet been achieved if the old urban cores are to be saved. The process of free migration and relocation accentuates the traditional American propensity to mobility, and at the same time it has driven the suburban sprawl to devouring more land and rendering metropolitan transportation increasingly difficult and costly. Regulation by public authorities appeared necessary. But such regulation would only worsen the situation unless it could provide efficient help for the central city and endow it with new attraction for residents other than underprivileged.[25]

In fact, public authorities have been concerned with urban housing for quite some time. National legislation had been adopted many years ago to help solve the riddle, and Federal funds had been brought on the scene. As early as 1892 Congress decided to make an investigation of slums in cities of 200,000 inhabitants or more. During World War I, Congress authorized several government agencies to provide housing for war workers, and an executive order of the President established a United States Housing Corporation to handle wartime housing and rent grievances. However, it took the depression of the 1930's to bring on large-scale Federal action on housing. In 1933 the Home Owner's Loan Corporation was established, and it functioned successfully until 1951. In its first four years it helped many homeowners threatened with foreclosure by accepting poor-risk mortgages held by private financial institutions and converting them to new longer-term mortgages at a lower interest rate, to bring the refinancing within the reach of the impoverished owners. In 1934 Congress made an essential step forward by passing the National Housing Act providing government insurance for residential long-term mortgages.[26] To carry out the objectives of the Act, the Federal Housing Administration was established June 27, 1934, as an emergency agency to help revive the home-building industry. Twenty-five years later, the F.H.A. had become "a major arm of the Federal Government. It is solvent and self-sustaining, having repaid in 1954 the last

[25] Miles L. Colean, *Renewing Our Cities,* Twentieth Century Fund, 1953; Coleman Woodbury (ed.) *The Future of Cities and Urban Redevelopment,* University of Chicago Press, Chicago, 1953; Nathan Straus, *Two-Thirds of a Nation: A Housing Program,* Alfred A. Knopf, New York, 1952; Raymond Vernon, *The Changing Economic Function of the Central City,* Committee for Economic Development, New York, 1959.

[26] *Your Congress and American Housing: The Actions of Congress on Housing from 1892 to 1951,* H. Doc. No. 532, 82d Cong., 2d sess., Washington, D. C., 1952.

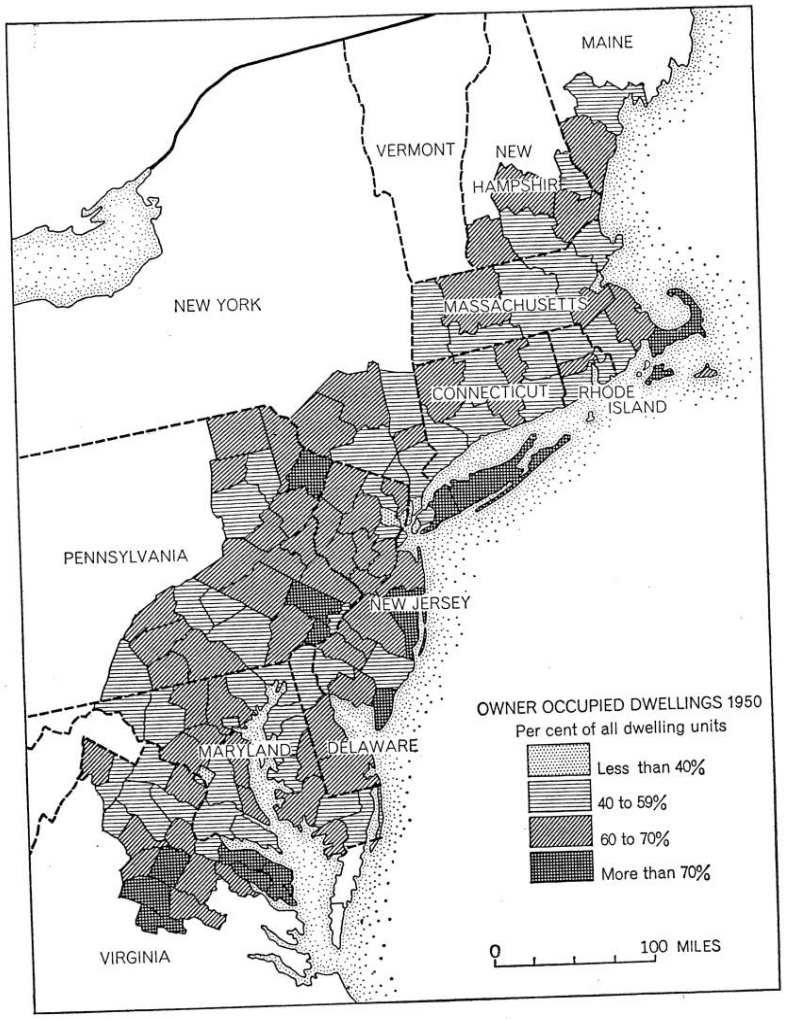

FIG. 132

dollar owed the Treasury. . . . The agency has helped 5,000,000 families to buy their own homes and has helped provide 800,000 others with housing in rental or cooperative developments." [27] There is no doubt, even among the critics of the F.H.A., that it has helped greatly to provide better housing throughout the United States, while at the same time it

[27] *The New York Times,* June 28, 1959.

has helped the construction industries and has contributed toward the achievement of sound design and better planning. Since 1934 the National Housing Act has been amended several times, extending the life of the F.H.A.

In 1944 the "G. I. Bill of Rights" authorized the Veterans' Administration to help veterans buy housing by guaranteeing up to 60 per cent of a loan made for such purpose by a lending institution. There have been other Federal agencies (the Home Loan Bank Board, the Federal National Mortgage Association, and others) entering the field of public help to housing. After various reorganizations the general coordination of these government programs was entrusted (1947) to the Housing and Home Finance Agency.

Until 1947 Federal aid to housing could be described as resulting from various national emergencies: the two World Wars, the depression of the 1930's, and the return of veterans after 1945. The restoration of relatively normal economic conditions after these very special periods did not make the public authorities abandon their interest in this field, for the new problems arising from urban and metropolitan growth were too great. The general welfare of the American nation was at stake, and it required more governmental assistance, as set forth in the National Housing Act of 1949. As early as 1937 Congress had created an authority, later renamed the Public Housing Administration, to aid local public-housing agencies for low-rent housing and slum-clearance projects. This brought about government cooperation on the Federal, state, and local levels in supplying low-rent housing with the help of public funds, while the F.H.A.'s insurance of mortgages, because of the standards required, had been of help mainly to medium-income families.

The Housing Act of 1949 introduced innovations by widening the provisions in favor of public housing and by starting *urban redevelopment and renewal.* Federal funds were authorized to help build new low-rent housing. At the same time slums were recognized as a national problem, and Federal aid was suggested for clearance and reconstruction or rehabilitation areas in cities. In 1954 the housing legislation was further amended, providing for more Federal participation in slum clearance, urban renewal, and planned redevelopment. Title I of the National Housing Act, dealing with housing renovation and modernization, was substantially expanded in 1949 and even more in 1954, helping many cities to obtain Federal aid in rebuilding many blighted sectors of the old urban cores.[28]

[28] For a good discussion of the Federal government's participation in the housing field see Glenn H. Beyer, *Housing: A Factual Analysis,* The Macmillan Company, New York, 1958, especially Chapter 10. Also various pamphlets put out by the Housing and Home Finance Agency, Washington, D. C., and a good critical appraisal by Catherine Bauer, "Redevelopment: A Misfit in the Fifties," in Woodbury, *The Future of Cities and Urban Redevelopment, op. cit.,* pp. 7–25.

Megalopolis has benefited greatly by this Federal participation in the fight against urban decay.

The original F.H.A. program, insuring mortgages of relatively good new homes, was of benefit chiefly, as most experts acknowledged, to people in the middle-income brackets, and it contributed to the sprawl of detached one-family dwellings in the inner and outer rings of suburbs. Federal policy should not be accused of having caused this sprawl, which was an inevitable result of the accelerated rate of housing obsolescence (to which many other factors contributed) and the continuing growth of metropolitan populations (though the pattern of in-migration had changed in Megalopolis). This policy made the whole process less painful, almost easy. It contributed to rapid urbanization and to improvement in the average quality of housing. It did not cost the taxpayers much, for F.H.A. repaid all the money advanced to it by the U. S. Treasury and it guaranteed and insured loans rather than contributing funds directly. However, this policy worked against the old urban cores, where it could only accelerate obsolescence.

At the same time, the old cores benefited from Federal aid to public housing and urban renewal. The relevant provisions in the national legislation made it possible to relocate at least some of the less fortunate people displaced by slum clearance in new, well-planned, low-rent dwellings. In many cases Federal and local governments cooperated effectively in such programs. The groups of high-rise apartment buildings, often called "villages," thus erected with the help of public funds in Harlem and other parts of New York City considerably improved the physical conditions of housing and the health conditions in the rebuilt neighborhoods. The new provisions in the National Housing Act called for urban renewal plans drawn for an entire neighborhood. Federal aid became more readily available in old urban cores for projects involving the renewal of an entire area rather than of just a building or two. Since 1949, Title I has authorized the use of land obtained by slum clearance not only for new dwellings but also for parks, shopping centers, and even parking lots.

During the 1950's Megalopolis has used these means of development more extensively than any other section of the country. Baltimore redeveloped, predominantly for residential use, two former slum areas (with

a total of about sixty acres), known as the Waverly and Broadway projects, and has planned others. Philadelphia quickly completed several smaller projects, chiefly for housing Negroes (Spring Garden Homes, Penn Towne, Harrison Plaza, and Cambridge Plaza Homes). Providence rebuilt the Willard Street Commercial Area, a project providing a shopping center and a city school, and has plans for a large residential project in the Mount Hope area, some 200 acres in size. Somerville, Massachusetts, made interesting plans, and New Haven began the redevelopment of major parts of its old downtown section. With Federal help, New York City built impressive groups of high-rise apartment towers (Delano Village in Harlem, Kingsview Homes in Brooklyn, Grant Houses on the Upper West Side, and the I.L.G.W.U. Cooperative Village at Corlears Hook on the Lower East Side), and undertook the spectacular, multi-faceted Coliseum project on Columbus Circle. More and more of such redevelopment projects are being started,[29] but not as many as was expected when the legislation was passed, for from 1949 to 1958 only one tenth of the credits appropriated by Congress had been disbursed. Renovation of the old urban cores proceeded at a much slower pace and with much more caution than did the suburban residential sprawl.

Much more spectacular indeed has been the rise, in the central sections, of large and medium-sized "cities" of *office towers and expensive luxury-type apartment buildings*, put up by private funds. Manhattan pioneered once more in this respect. Building of its magnificent Rockefeller Center was started as early as the late 1920's and continued through the 1930's. The great depression kept this development from exercising over the midtown area all the stimulating influence that might have been expected. After World War II, however, the trends it suggested became dominant between 42nd and 60th streets, giving this district a new look. New office towers of glass, set in various metals, began to rise along Park, Madison, and Fifth avenues, replacing expensive apartment buildings, millionaires' mansions, or older and smaller office buildings already classified as obsolescent in choice locations. In 1947 the establishment of the United Nations headquarters on the East River between 42nd and 47th streets added to the momentum of the renewal of Manhattan's East Side, both north and south of 42nd Street, and the removal of the Third Avenue "El" (a part of the city transit system on elevated tracks) in the mid-1950's provided

[29] Housing and Home Finance Agency, *Approaches to Urban Renewal in Several Cities*, Urban Renewal Bulletin No. 1, U. S. Government Printing Office, Washington, D. C., 1954; and "Redevelopment Today" in *Architectural Forum* (New York), April 1958, pp. 108–113.

new stimulus for the construction of luxury apartment houses. During this same period there has been much renovation activity also on Manhattan's Upper West Side, as evidenced by the Lincoln Center for the Performing Arts and the Morningside Gardens housing development undertaken by Columbia University and other institutions in the area; and in between these two centers many new high-rise residential buildings have been built or are being planned by both public and private agencies. Even *The New York Times* has decided to move from its celebrated location near Times Square to the bank of the Hudson River near 70th Street. And Rockefeller Center expanded westward near 50th Street. During the 1950's, too, vast programs of renovation, including many new and impressive skyscrapers, were started or announced in the old downtown section of Lower Manhattan, where even the Wall Street financial district had seemed for a while threatened by the midtown development along Park and Fifth avenues.

The obvious success of the daring experiments conducted in Manhattan from 1947 on set an example that many other American cities have decided to follow, although on a more modest scale. The essential lesson of New York's hub development has been that investment in renewal of the central business district can pay handsomely in terms of real estate values and long-term profits. Pittsburgh was probably the first large city outside Megalopolis to undertake a comparable program, apparently with success. Since World War II great new office towers have arisen around Mellon Square, and the "Golden Triangle" has been redeveloped, with a large new civic center added back of the business district. Many other cities have followed suit – Philadelphia with its Penn Center in the very heart of town, Washington with the rebuilding of its southeastern section, and Boston, Baltimore, Newark, New Haven, and Trenton with ambitious renewal programs in their old downtown areas. By 1959 more than 200 municipalities in the United States were engaged in some sort of urban renewal.

Altogether the modifications thus introduced in the central hubs of the old urban nuclei have affected as yet only a minor acreage, a very small fraction in terms of space and numbers of buildings of the total urban core areas. Manhattan, where the churning has more drive and power, is the only actual exception to that rule – a very notable exception, to be sure, due apparently to the unique concentration of needs for office space, hotels, and luxury apartments in New York City. Thus the question arises: how exceptional are the Manhattan trends? No other American city has shown any signs of success in attracting anything comparable

to the massive centralization of the nation's financial, managerial, and mass-media functions in New York City, and singularly in the hub of Manhattan. No other city could get another "United Nations" with a whole diplomatic corps of its own, almost duplicating the role of Washington in foreign and international relations. But, on a more modest scale, could other cities apply some of the same economic principles that have succeeded in New York, and put to better use their respective facilities and assets as regards industrial and regional management, financial operations, political role, and cultural endeavors? In other words, is Manhattan's evolution *unique*, because of the *nature* of its national and international role? Or is it merely unusual in terms of *degree* and *size*, demonstrating in powerful manner what could be achieved also on a smaller scale by many other smaller but still dynamic metropolises?

The answer to this query could reach deep into our whole knowledge of urban economics and growth. It involves the definition of the basic functions of the city today, and of the changes presently occurring in these functions. Experiments that have been under way for only a few years and on relatively small fractions of the old cities can hardly provide as yet more than a few preliminary and somewhat vague indications. Nevertheless, these are noteworthy. It might seem expected for great regional centers outside Megalopolis, such as Pittsburgh, Detroit, Chicago, or San Francisco, to succeed in rejuvenation and renewal of their business districts, for they are less dependent on New York by virtue of distance. But when this occurs even in Megalopolitan cities like Philadelphia, Baltimore, Newark, and Trenton, lying between the two great concentrations of offices in Manhattan and Washington, D. C., it suggests that Manhattan's development is not unique. Very little has been attempted, however, in smaller towns outside the axial belt, such as Reading, or Scranton, Pennsylvania, or even Worcester, Massachusetts. These do not seem to offer hopeful prospects.

It must be realized that *renewal and rebuilding provoke displacement and relocation* of people and business, a process bringing new profits to the real estate trade, the construction industry, and various other local interests, and new worries and expenses to the local government. An abundant literature has dealt with the problems arising out of the relocation of the residents of blighted areas being cleared. Since slums degrade the people who live in them as much as, and often more than, they make the buildings decay, the cost of clearing them and providing their residents with better housing must be considered as a long-range investment, the profits from which cannot be reaped immediately or assessed in dollars

and cents. The local society as a whole shares in these benefits in the long run, for the environment of daily life ought to be improved by the removal of slums not only for those who once lived in them but also for those who lived or worked in adjacent districts. Insofar as slums often breed crime, the community on an even larger scale should be directly interested in their eradication.

When the redevelopment or renewal of an urban area displaces people the new buildings erected on the site do not correspond in most cases to the same use and are not fitted, even when dwellings succeed dwellings, for the same users. In the case of low-rent public housing some of the former occupants of the place may be rehoused in the new buildings on the site, but most of the former residents will move elsewhere, generally farther away from the city's center. The number of people officially relocated by local urban renewal agencies by December 31, 1958, was not very high: 17,882 in New York City, as a result of the demolition of 2,210 buildings; 1,458 in Boston, where 580 buildings were demolished; 12,600 in Washington, D. C., where 1,949 buildings were demolished; 4,000 in Newark, New Jersey; 121 in Cambridge, Massachusetts; 123 in Elizabeth, New Jersey; 250 in Hartford, Connecticut; 2,545 in Providence, Rhode Island; 500 in Passaic, New Jersey.[30] These numbers varied greatly from city to city, and not in proportion to the extent of actual rebuilding carried out within the central core or the periphery but rather to the economic level of the population. Thus in Norfolk, Virginia, where most of the people involved were Negroes, more people were relocated (almost 20,000 before 1959) than in New York City.

Obviously most of the actual renewal and displacement of people in Megalopolis, which has affected a few million people in the last twenty years, has taken place without intervention of public authorities. However, it has been helped and to some extent fostered by legislation making it financially easier, especially through F.H.A., to acquire new individual homes for those who could afford them, and they have been many. In addition to helping chiefly people who had at least a minimum of credit, this legislation and the various provisions in tax legislation favoring real-property owners with incomes in the higher brackets have fostered the building of new homes in the form of one-family detached structures. Families with small children and many other American households have certainly liked this solution, but it has contributed to the great suburban sprawl of recent years, devouring space, materials, and services,

[30] Data from *The Municipal Year Book: 1959*, published by the International City Managers' Association, Chicago, 1959, especially Table XV, pp. 332–339.

while it has also accelerated housing obsolescence in the cores of central cities.[31]

The Balance of Recent Trends

Since 1930 new construction of dwellings has developed mainly outside the old urban nuclei, but more in the axial belt of Megalopolis or on its immediate fringes than on the periphery of the region as a whole. This trend is well demonstrated on the maps of population density for 1960 and 1950 (Figs. 1 and 122, pp. 6 and 387) and of population change, 1930–50 (Fig. 73, p. 248). It results largely from the fact that the axial belt, born out of the fusion of early elements in the economic hinge, offers locations between old nuclei with the advantage of easy access to two or more central cities.

This observation for Megalopolis agrees with general trends noted in the United States.

> Where [metropolitan] areas are located in close proximity to one another the advantages of accessibility to two or more centers rather than to one only may be manifested in a more pronounced tendency to deconcentration than occurs where areas are widely spaced. The presence of two or more metropolitan areas within short distances of one another suggests, too, that the extent of metropolitan development in that locality may have advanced further than where areas are located far apart.[32]

In the whole United States, Megalopolis is the section most likely to exploit fully the consequences of a chain of adjacent metropolitan areas, the central cities of which are very close to one another. A speedier urbanization of the interurban areas has resulted. The general remarks of Amos Hawley apply to this region:

> Until 1920 the differences between relative growth rates of satellite areas were negligible. Following 1920 the highest ratios developed in areas the central cities of which were within 50 miles of other central cities. The more isolated areas had the lowest ratios of satellite growth. The outlying zones of [metropolitan] areas 50 to 100 miles from other areas, however, had higher ratios than did similar zones in areas within 50 miles of other areas, in both 1910–20 and 1940–50. The less the distance between central cities the smaller was the proportion of all increase gained by central cities and the larger was the share received by satellite area. . . . When the rates are standardized for size of central city, deconcentration is found to have been inversely related to distance between central cities.[33]

[31] The statistical data gathered in the *U. S. Census of Housing: 1950* has been well analyzed with respect to these trends by Richard U. Ratcliff, Daniel B. Rathbun, and Junia H. Honnold, *Residential Finance, 1950* (Census Monograph Series for Social Science Research Council in Cooperation with the U. S. Department of Commerce), John Wiley and Sons, New York, 1957, and in Winnick, *American Housing and Its Use, op. cit.*

[32] Amos H. Hawley, *The Changing Shape of Metropolitan America: Deconcentration since 1920,* The Free Press, Glencoe, Ill. 1956, p. 75.

Most of the studies of metropolitanization in the United States try to establish general or average trends developing all over the country. There are always exceptions to such rules. The coal-mining region of eastern Pennsylvania is in many respects such an exception within Megalopolis, for it has been declining more than any other part of the area. Even there, however, new construction of housing and retail-trade establishments has been occurring mostly outside the main cities; and the decline of that area would certainly have been much worse had it not been for its relative proximity to the prosperous axial belt of Megalopolis.

Some measure of the distribution of new residential building in the 1950's is provided by computing the total of new dwelling units authorized in the eight years 1950–57 in various places around Megalopolis.[34] Thus in these eight years the small township (including the borough) of Princeton, New Jersey, with about 25,000 inhabitants in 1957, gained 938 new dwelling units, while the neighboring central city of Trenton (with a population greater than 150,000) added only 558. Washington, D. C., added 27,728 dwelling units, but its suburban counties in Virginia added more (14,838 in Arlington alone, and 34,403 in Fairfax County), and the Maryland suburbs of Washington expanded even more rapidly (40,846 new dwelling units in Montgomery County). In Connecticut there was a great deal of new residential building. Stamford (74,000 people in 1950), having grown in population 37.6 per cent in 1940–50, authorized 7,234 new dwelling units in 1950–57, while New Canaan township (population 8,000 in 1950) authorized 1,304, but the city of Hartford (177,000 in 1950) added only 3,727. Both Stamford and New Canaan definitely had a more suburban or satellite function and location with reference to New York City than did the state capital of Hartford. Similar examples could be given in Massachusetts and Rhode Island: 11,641 new dwelling units for Boston and 4,395 for Framingham, which belongs to Boston's outer suburbia; 3,353 for Providence and 6,190 for the satellite township of Warwick. In Pennsylvania a similar picture can be obtained in the Philadelphia metropolitan area. That central city had been relatively active, adding 49,695 new dwelling units, but the small suburb of Upper Darby built 2,161 and the indus-

[33] *Ibid.*, p. 163.

[34] U. S. Department of Labor, Bureau of Labor Statistics, *New Dwelling Units Authorized by Local Building Permits,* Annual Summaries, 1950–53, 1954–55, 1955–56, 1956–57, U. S. Government Printing Office, Washington, D. C., 1954, 1956, 1957, 1958.

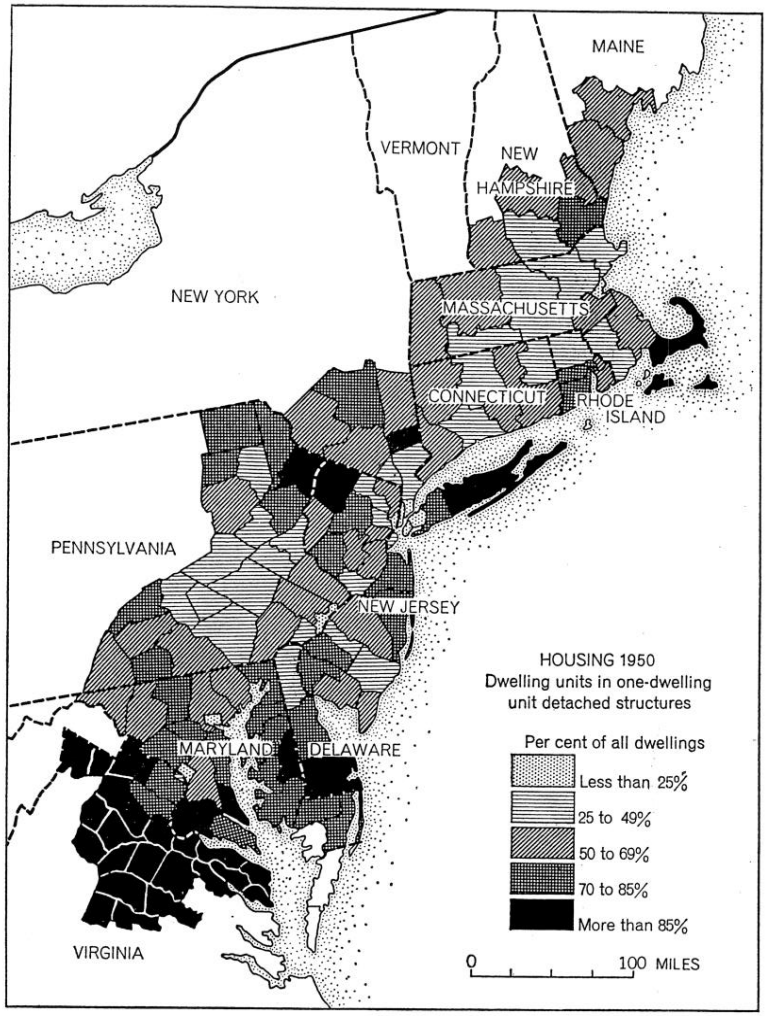

FIG. 133

trial satellite of Bristol, on the main Delaware Valley axis, 9,242. During the same period Wilkes-Barre in the coal-mining area (76,800 inhabitants in 1950) built only 222 new dwelling units! In New York City, Queens was by far the most rapidly developing borough, adding 85,000 new dwelling units, more than in Manhattan and the Bronx put together. Manhattan alone authorized 41,425 new units, but the township of Babylon on Long Island recorded 14,743, and the smaller Massapequa Park 4,075.

Since 1957 the construction rate has continued to increase in Megalopolis, but its acceleration has "taken a breather" in the outer suburbs. This has been especially clear in the tri-state New York Metropolitan Region, as observed by the Regional Plan Association;[35] however, while the one-family detached structures remain predominant in the outer suburban rings, a definite trend has developed, especially since 1959, toward multi-family units in the inner suburban ring, as has long been true in the central core. This is true of the larger cities and their suburbs, while the trend is less obvious in smaller places. The main reason for this development is, of course, the higher average cost of one-family units. Construction costs rose in the 1950's, land values increased considerably in the major cities and their immediate vicinity, and the tight money policy prevailing in the late 1950's raised interest rates for loans and mortgages.

The average valuation of a dwelling unit authorized in 1954 in the New York–Northeastern New Jersey metropolitan area was estimated at $10,811 for a one-family house and $8,209 in two-or-more family structures. That same year 63,172 new dwelling units were added in one-family houses and 31,952 in apartment buildings. By 1956 the average valuations stood at $12,893 for one-family houses, of which 51,732 were built, and at $7,958 for apartment units, of which 25,918 were built. The percentage of the latter in the total of new dwelling units was edging up slightly. In the Philadelphia area the trend was different. There 26,410 one-family houses were authorized in 1954 (at an average value of $10,043) and 22,215 in 1956 (average value $11,357), while the number of new apartment units fell from 4,134 in 1954 (average value $5,140) to 1,723 in 1956 (average value $7,713). Thus the Philadelphia area was still adding a higher percentage of individual houses, more than 80 per cent of them in the suburbs, for it is on the whole less crowded than the New York area. The demand for new apartments in the city is mainly for the more expensive kinds and is a much less sustained demand than in the New York area.[36]

The trends in the middle 1950's in the other large metropolitan areas in Megalopolis can be seen in Table 18. It thus seems that only in the New York area did the average valuation of new apartments authorized go down in 1954–56. Elsewhere the cost of new apartment units rose sharply, but these remained everywhere much less costly on the average than one-family houses, the latter being everywhere predominant in numbers,

[35] See the Regional Plan Association's series of Bulletins, *New Homes in the New Jersey–New York–Connecticut Metropolitan Region*, especially No. 5, "First Six Months 1959," RPA Bulletin 93, New York, February 1960.

[36] U. S. Department of Labor, Bureau of Labor Statistics, *Trends in Building Permit Activity*, Bulletin No. 1243, U. S. Government Printing Office, Washington, D. C., 1959, pp. 107–110.

Table 18
NEW DWELLING UNITS IN SOME MEGALOPOLITAN CITIES, MID-1950's

	Boston		Baltimore		Washington, D. C.	
	1954	1956	1954	1956	1954	1956
New one-family houses						
Number	10,204	9,490	14,275	11,205	17,758	12,102
Average valuation	$10,286	11,467	9,618	10,913	9,941	12,998
New apartment units						
Number	541	446	1,189	333	6,151	3,809
Average valuation	$6,919	8,101	7,211	8,610	5,443	7,484

Source: U. S. Department of Labor, Bureau of Labor Statistics, *Trends in Building Permit Activity*, Bulletin No. 1243, U. S. Government Printing Office, Washington, D. C., 1959, pp. 107–110.

though less so in the New York area than in the other four major metropolitan areas.

In the New York Metropolitan Region (a larger territory than the standard metropolitan area of the Census) new apartments rose percentagewise in the total number of new homes authorized through 1959. In the first six months of 1957 they accounted for 30 per cent of all new homes authorized in the whole region, in the first six months of 1958 for 47 per cent, and in the first half of 1959 for 50 per cent. These same percentages stood at 86, 91, and 94 in New York City and at 20, 36, and 41 in the seven inner-ring suburban counties.[37] The great city of New York still experiences a demand for apartments in its old core and in its surburbs that can be explained in part by the higher degree of crowding and in part by the enormous concentration of higher- and lower-income people around its hub and its industrial and commercial establishments.

As such an enormous metropolitan system grows on and on in population and in territory, the problem of choosing between "spacious living" and "easy access" becomes acute. A careful analyst of this problem has observed:

> The balancing of access convenience against the desire for space and other amenities works out differently for individuals who have different tastes and housing needs – and different levels of income to satisfy them.[38]

The lower-income category cannot afford to commute from afar because of the cost. The upper-income category can very well afford long-distance commuting, but they can also afford the more expensive apartments of the residential towers that increasingly characterize Manhattan's

[37] Regional Plan Association, *Bulletin 93, op. cit.*

[38] Edgar M. Hoover and Raymond Vernon, *Anatomy of a Metropolis*, New York Metropolitan Region Study, Harvard University Press, Cambridge, Mass., 1959, p. 152.

expanding hub. Such expensive apartment buildings close to business districts are also rising in the old cores of other major cities in Megalopolis and on the West Coast. They are usually associated with important concentrations of the office industry, the higher-salaried officers and employees of which like such residences. Among those in the higher-income range, suites in luxury hotels are also popular.

The towers, either for residential or office occupancy, do not devour space as the one-family houses do. But their inhabitants live in a world of stone, brick, glass, and cement with little greenery in it. Growing bushes and other plants on terraces is undertaken by some, especially in Manhattan, to make up for the lack of natural greenery around the homes. The residents of expensive apartments with such terraces also can often afford a country house that is relatively far away, though still situated within Megalopolis. This is another way in which a great deal of space is used per family.

For many inhabitants of Megalopolis access to their place of work means long commuting. Data are not yet available to tell in precise figures the numbers of commuters whose daily trip to work by train, bus, or private car is greater than ten miles, greater than thirty miles, or even greater than fifty miles. In fact, mere distance is hardly a proper measurement within the larger cities, especially in New York City or in Philadelphia. A distance of more than ten miles from home to work does not necessarily make one a commuter, for it is not infrequent within the city limits; but it certainly means commuting in Connecticut or New Jersey. Whether the commuting trip by car on a rural New Jersey road is more disturbing in any way than a subway trip of the same distance from Queens to lower Manhattan may be long debated. Although the answers to all these questions may be very important to specialists on metropolitan transportation, to local politicians, and last but not least to the commuter or subway user himself, they do not matter decisively for the pattern of land use.

If the commuter makes his daily trips despite the distance and other odds, it is in the great majority of cases because he chose to do so. The possibility of choice can be said in recent times to be denied by existing circumstances only to a few minorities, especially to the Negroes and Puerto Ricans. The choice to commute may have been dictated by many various considerations – financial factors, emotional factors (such as special attachment to a certain location, neighborhood, or even building), or preference of a certain mode of life for reasons of taste, career, social contacts, children's education, and so forth. These various considerations

may become so entangled that although people often know why they move to a new house, they have great difficulty finding out why they do not move but remain in a spot even after its position has changed with relation to the considerations that originally led to its choice.

Study of changes in land use within the urbanized districts of Megalopolis reveals a complex network of motivations contributing to such changes. The push of the residential expansion toward the periphery is a logical and centuries-old trend in large urban centers, observed in many cities around the world. Where topography permitted, the city in old times grew by more or less regular concentric rings, initiating the custom that is still followed of speaking of the "center" of the city and an "inner ring" and "outer ring," as if city growth always proceeded along a circular pattern. Beyond the limits of the city proper, strongly emphasized by walls in early days, suburbs usually developed at the gates or farther out along one of the main lines of traffic radiating from the city's crossroads. Thus, beyond the well-constructed outer ring of a given period, the beginnings of the next period's outer ring are found. Sir Patrick Geddes of Edinburgh, one of the leading initiators of modern urban studies, compared London's growth to that of a coral reef and suggested the name of "man-reef" for such developments.[39] He was also conscious of the decisive role of the major lines of traffic in orienting the spread of urbanization. Half a century ago he foresaw the shaping of Megalopolis:

> Greater New York, now linked up, on both sides, by colossal systems of communications above and below its dividing waters, is also rapidly increasing its links with Philadelphia – itself no mean city – and with minor ones without number in every direction possible. For many years past it has paid to have tramway lines continuously along the roads all the way from New York to Boston, so that, taking these growths altogether, the expectation is not absurd that the not very distant future will see practically one vast city-line along the Atlantic Coast for five hundred miles, and stretching back at many points; with a total of, it may be, as many millions of population.[40]

Megalopolis has come of age probably more rapidly than Patrick Geddes expected and, at least in this century, with a much more modest number of inhabitants than he envisioned. Perhaps even a man of his breadth and daring of vision could not imagine in 1915 the rate at which the Megalopolitan people could devour space and produce wealth, to plow it back as rapidly into the land. For here the suburban symbiosis of urban and rural has developed on an especially lavish scale, with one-family detached houses, lawns and backyard gardens, parks, shooting grounds, country summer homes, and other such uses of the land. This represents such an intensity of transportation movement and a source of profits for so many industries and trades that the rapid consumption of land is coupled here with a remarkably high rate of capital accumulation and redistribution.

[39] In his often-quoted *Cities in Evolution*, London, 1915, Patrick Geddes wrote: "This octopus of London, polypus rather, is something curious exceedingly, a vast irregular growth without previous parallel in the world of life – perhaps likest to the spreadings of a great coral reef. Like this, it has a stony skeleton, and living polypes – call it, then, a 'man-reef' if you will." (p. 9 of the new and abridged edition published by Williams & Norgate, Ltd., London, 1949). Despite Geddes' warning against too-easy biological comparisons, cities are too often likened to growing "organisms," for instance by Eliel Saarinen, in *The City*, Reinhold, New York, 1943, pp. 8–26.

[40] Geddes, *op. cit.*, pp. 23–24.

The metropolitan explosion, which has here conquered so many acres and subordinated to its daily use or comfort so many more acres (chiefly wooded areas apparently left empty), has generated a great deal of wealth by providing work for so many people and consuming so many materials and services. It is perhaps difficult to estimate in millions of dollars all the business these trends in land use have brought to the realtors and shopping centers, to the construction and transportation industries, to the basic manufacturing of cement, steel, lumber, glass, machinery, furniture, etc., and to others because of the daily use of motor cars, rubber tires, gasoline, and do-it-yourself tools, to mention only a few of the beneficiaries. To every individual of the families involved, suburban sprawl may mean increased expenditure, but they can generally afford it, although this way of life, as compared with others, may leave less money for other possible expenditures or for savings. Again, this is a matter of choice by the individual, and since many millions chose such metropolitan living, an enormous amount of capital is turned over again and again, and much wealth is generated within the region. Whether such growth of wealth can be expanded indefinitely remains a problem for theoretical economists, perhaps not an easy one to solve.

For the purposes of this study, the consideration of such processes reminds us of the fact that it costs a great deal of money to devour space as residential sprawl has done in Megalopolis during the past twenty years.[41] The cost is not paid up when the essential plant is in place. Maintenance is necessary for houses and highways, and the latter must be widened or otherwise improved as traffic swells. Schools must be expanded, and more parking facilities and more parks must be provided. More wir-

[41] An interesting outline of the complexity of the process involved in building cities can be found in *Building, U.S.A.*, by the editors of *Architectural Forum*, McGraw-Hill Book Co., New York, 1957.

ing, sewage, and piping of all kinds must be laid and maintained through the areas where homes scatter or agglomerate. This means upward revision of rates of servicing and in the long run more taxation. The circuits breeding more wealth may well reach saturation, and individual budgets may tighten up. Then the momentum of the rising tide of urban expansion may slacken, and the problems of increasing population may be solved in less expensive ways.

Many of the studies of the metropolitan "explosion" and of its consequences in terms of land use have assumed that the means of financing what the people wanted would always be found. Such discussions have too often been restricted to defining the people's desires, generally established on the basis of the trends in previous years, even though those trends may have been started by another generation than the one whose wishes ought to be decisive in the forthcoming years.[42] If the availability of credit for expansion and maintenance were to decrease, people might look for less expensive solutions that would still take them out of the slums or prevent the obsolescence of their present homes. The answer might lie partly in high-rise apartment buildings, built far enough apart to leave enough air, light, and, if possible, recreational space for the dense population of the towers. We have already noticed, in the figures on building permits, a trend in the late 1950's toward these types of multi-storied houses. This trend could well develop more strongly in the 1960's. In this case the threat, instead of being to devour too much space, would become to gather too high a density of population over vast areas built-up uninterruptedly. While development of some of the recent suburbs may look wasteful, similar and worse waste of human resources could result from overcrowding.

Another partial solution to metropolitan growth with less sprawl could be achieved through more rehabilitation of obsolescent or aging buildings. Recently thought and discussion have been turned increasingly in that direction. By American standards it may seem too conservative, and in the long run almost wasteful, to attempt to control obsolescence and fight blight by rehabilitation short of full redevelopment, but it is not impossible for these standards to be revised and for techniques of rehabilitation to be worked out and applied that would greatly improve buildings without actually rebuilding them. The remarkable organization known as The American Council to Improve Our Neighborhoods (ACTION) has already achieved substantial results in this direction and has contributed to educating the public as well as the national leadership in such matters. Recently Miles Colean, the distinguished housing expert, reminded the specialists of the enormous resources available in the "standing stock" of buildings housing the nation:

> The value of the residential structures in our urban communities, exclusive of land, has been estimated (as of 1955) to be $320 billion, or nearly one-quarter of all national wealth.
>
> From its magnitude alone, this vast investment merits attention and concern. From its bearing on the general welfare, in terms of the health, safety, comfort, and happiness of the people, its meaning is not surpassed by any of our other assets. In terms of the business generated through real estate and financing transactions and property repair and improvement, its importance is hardly less. It provides a large source of local revenue. . . .
>
> If we find that the tasks of maintaining and improving the existing housing supply and of adapting it to altered environmental conditions can make for good business and satisfactory investment, then we may point the way both to an important economic opportunity and to a means for reducing governmental burdens. Or, if we find that the business opportunities are unexploited, then we may seek the reasons and undertake to suggest remedies.[43]

These statements prefaced a careful survey of the opportunity existing for residential rehabilitation. Starting with so-called "prestige rehabilitation," of which Foggy Bottom in Washington is the prime instance, the survey dealt also with middle-income and low-rent housing rehabilitation, with the problem of financing, possible aid from public funds, and the general need to expand the volume of rehabilitation. It concluded:

> What are the alternatives to using rehabilitation more extensively in local housing programs? To place complete reliance on new, private construction may accelerate the outward expansion of urban population, producing entirely new city forms replacing existing urban centers. To rely primarily on publicly aided construction in existing urban centers requires an extremely high level of public and private expenditures. Rehabilitation at standards as closely approximating the abilities of local users to pay, without sacrificing a realistic standard of human decency, deserves a larger role in the housing programs of every community.[44]

[42] This kind of discussion, trying to find out what is happening by estimating what has been and will be the free and unobstructed choice of the people, is often encountered in the land-use studies in such books as, for instance, *The Exploding Metropolis*, by the Editors of *Fortune*, Doubleday, Garden City, New York, 1958, or William H. Whyte, Jr., *The Organization Man*, Simon and Schuster, New York, 1956.

[43] Miles L. Colean in "Preface" to William W. Nash, *Residential Rehabilitation: Private Profits and Public Purposes* (directed by Miles L. Colean) (ACTION Series in Housing and Community Development), McGraw-Hill, New York, 1959, pp. xix and xx.

[44] Nash, *op. cit.*, pp. 196–197.

It is noteworthy that almost all examples of successful rehabilitation quoted in this survey are in large cities, most of them in the five major cities of Megalopolis. This ought to have been expected, for because of the chronology of American settlement and urban growth the main cities on the Northeastern seaboard have more aged housing, higher urban residential densities, and a great turnover of population in more diverse income brackets.[45] The need for some stabilization and rehabilitation is greatest there, and some of the more successful experiments have already taken place there. It is unfortunate, however, that the most impressive successes have been on the side of "prestige rehabilitation," in the service of the wealthier residents or newcomers.

More emphasis on rehabilitation should decrease the mobility of residents within the large metropolitan areas and cause less obsolescence, as well as less new scattering eating up more suburban space. However, more buildings will have to be added anyway, to accommodate the increase in population. It is probable that more new buildings will be in multi-storied buildings for all levels of income. Many families with small children may prefer detached structures in outlying locations, while parents of already grown-up children may prefer apartments in central locations. As both these categories of families will grow in number, more dwellings of both kinds will be needed. The mobility of Megalopolitan residents will still be marked, though perhaps slightly less so.

This mobility, which has contributed much to residential obsolescence, was never caused by the physical deterioration of buildings alone. As a matter of fact, if the various forces at play in this intra-regional mobility could be assessed with some precision, it would probably be found that several other factors have been more effective in spurring it on. First, the desire for a homogeneous neighborhood of a certain sort has often caused large groups to move to another district in the community once they thought their territory had been "infiltrated" by newcomers of an "undesirable" race, creed, or social status. Panics have occasionally developed along entire streets, many houses being sold in a hurry at relatively low prices. Second, residences are attracted by employment, and migration of industrial plants has caused sudden local sprawls, and at times entire townships, to be built up. Third, the spread of residences is greatly influenced by transportation facilities, and new highways, bridges, or subways (there has been little recent extension of them) may determine the development of new places and increased scattering in some areas. Thus, even though residential rehabilitation may be favored and extended, bringing more stability to some communities, the traditional mobility of people in Megalopolis will continue to be influenced by transport, by location of industrial and commercial employment, and by social and racial prejudice.

[45] Harland Bartholomew, in *Land Uses in American Cities* (Harvard University Press, Cambridge, Mass., 1955), studied many middle-aged cities, only one of which, Newark, New Jersey, is in Megalopolis. He found Newark deviating from the "norm" especially as only 8.44 per cent of its developed area was in single-family homes by 1957 (his footnote, p. 32). Megalopolitan cities are on the average built higher than other American cities.

We have been dealing almost exclusively with residential land use in this chapter on urban uses of the land. Residents come to or stay in a place sometimes because of its attractiveness but more commonly because of the economic opportunities it offers. Land use in an urbanized region can hardly be separated either from the economic activities by which its population makes a living or from the social structure which determines the character of neighborhoods, and the social structure in turn is bound to reflect the occupational characteristics of the region.

Form and Function

The urban economy has always differed from agriculture in the proportion of space allocated to *residential occupance* on the one hand and *economically productive functions* on the other. In farming regions dwellings occupy an almost negligible fraction of the space given to agricultural production, and this is still true of most of the farms in Megalopolis. In urban territory, on the contrary, residential needs take up most of the land area, only a fraction of which is indeed occupied by the factories, stores, warehouses, offices, and transportation facilities that make up the "productive" part of a city's physical plant. This fraction, minor in area, is, however, the very essential condition of a city's existence. It produces the profits out of which the residents are paid the wages, salaries, fees, and other revenue on which they subsist.

Thus in the past the traditional distinction grew up between *downtown* and *uptown* in American cities, *downtown* being where people worked and transacted business and *uptown* being where they lived. The two sections of the city were quite distinct, having different functions and different looks. Not all industrial and commercial functions could be kept in the old downtown district, and many industrial plants and warehouses moved toward the periphery or were built in adequate suburban locations. Little by little the urbanized districts of large metropolitan areas became complicated puzzles, made up of an irregular pattern of many districts with different specializations. From study of this puzzle for the New York or Philadelphia metropolitan area three main generalizations can be

drawn: (1) residential occupance still covers much more acreage than all other uses combined and is found in all parts of a city except in a few heavily industrialized waterfront sectors; (2) main lines of transportation attract industrial establishments and warehouses, as is obvious along the water channels of the great seaside ports, along major rail lines, and along certain highways such as Route 128 around Boston (sometimes surnamed "Electronics Boulevard"); (3) business offices and entertainment establishments are usually concentrated in or near the old "downtown."

To what extent factories, warehouses, or offices move in or out of the various parts of Megalopolis is a rather complex question, better studied for each category in terms of the economics of its function. As a *use* of the land, industrial and commercial occupation is less well known to us than housing, for it has never been as carefully surveyed on a national or regional scale in the United States as has been done for housing in the Censuses of housing. Censuses of business and manufacturing provide a good deal of data about employment, payrolls, value added by the manufacture, sales, or receipts, but do not inform us about the extent of the physical plants, the frequency of displacement, or the kind, age, and condition of the buildings.[46]

We know, however, that certain manufacturing specialties concentrate in certain areas; that space for expansion is important to any industrial enterprise that is not folding up; that the recent trend in architecture of industrial buildings has been toward more space on the ground floor and buildings with fewer stories. This has meant greater acreage consumed and more cases of moves "out of town," for such acreage can be secured more easily and more cheaply in less crowded districts. Since to an industry accessibility is expressed in terms of transportation costs, which represent an increasing share of all costs, the axial belt of Megalopolis between important city markets has remained a favored location, although an improved highway system has helped to widen many parts of the traditional axial ribbon of territory along the Fall Line.

Meanwhile, architectural trends for many categories of establishments employing white-collar personnel have gone in the opposite direction. Manufacturing plants and even specialized warehouses have indicated a tendency to relative dispersal and to sprawling on the ground in single-story structures, but corporation offices, banks, department stores, hotels, and even hospitals have shown a definite preference for high-rise towers

[46] See John Rannells, *The Core of the City*, Columbia University Press, New York, 1956. This is a pilot study, especially concerned with the central district of Philadelphia.

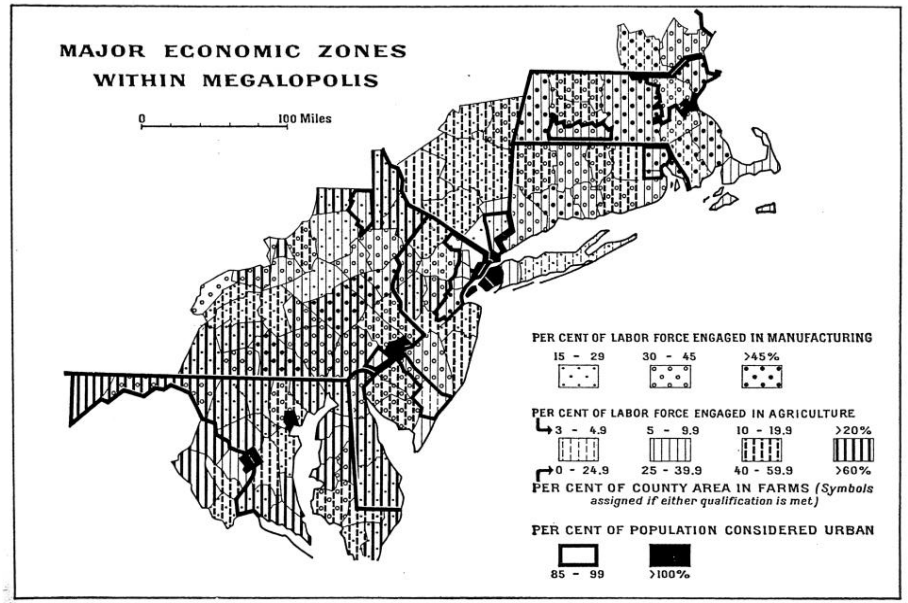

FIG. 134. The economic zones on this map result from superimposing the various characteristics shown separately on the three maps of Fig. 126. The data are from the Censuses of 1950.

and for congregating in or near central business districts. At the same time more separation in space has developed between the production and the nonproduction facilities of the same firm or industry and, within their nonproduction activities, between warehousing, research laboratories, and administrative offices. The latter two categories of activities, however, seem to prefer locations not too distant from one another. Manhattan has attracted in increasing number the offices of industrial corporations, which meet their ever-expanding need for more floor area by rising toward the sky rather than by spreading over more ground acreage. At the same time, research laboratories of the same corporations are beginning to crowd in obvious fashion within relatively easy reach of New York City, especially in New Jersey and Connecticut. In such locations the laboratories find themselves, of course, within easy reach also of much else that they often need besides advice or instructions from their administrative offices.

All these trends occur to diversify the built-up landscapes in Megalopolis and each of the major metropolitan units of the region. *A sort of increasing division of labor for the metropolitan space works itself out as*

form and function tend to link themselves more obviously in the patterns of land use. These patterns result from an increasingly refined division of labor among the activities that must cooperate in complex modern society to bring about the finished products of manufacturing, the consumption of business transactions, and the final profits at which the economic process aims.

For some time architects and urbanists have been talking and preaching about the necessity of adapting form to function in buildings and city plans. In this century the teachings of Frank Lloyd Wright and Le Corbusier especially have insisted on what is often called the "organic requirements" of architecture and planning. More than a century ago, in discussing architecture, the American sculptor Horatio Greenough wrote:

> To plant a building firmly on the ground; to give it the light that may, the air that must, be needed; to apportion the spaces for convenience, decide their size, and model their shapes for their functions – these acts organize a building. No college of architecture is a quorum to judge this part of the task. The occupants alone can say if they have been well served; time alone can stamp any building as solid. The monumental character of a building has reference to its site – to its adaptation in size and form to that site. It has reference also to the external expression of the inward functions of the building – to adaptation of its features and their graduation to its dignity and importance; and it relates, moreover, to that distinction which taste always requires between external breadth and interior detail.[47]

This statement, remarkably advanced for 1852 (when its author died), could apply today as general instruction for the planning of a whole development or new town, as well as for buildings.

Since the 1920's Le Corbusier has championed an urban architecture favoring high-rise large apartment buildings, generously spaced, with a good deal of greenery around them, and within easy reach of large parks.[48] As often happens to theoreticians, he has been more successful in inspiring the work of others, architects or town planners, than in designing such structures himself. Although other schools of architecture have prevailed in Megalopolis, nowhere else have so many buildings been erected of the general sort he foresaw. The rules of the real estate market seldom have allowed for the actual "vertical green city" Le Corbusier preached.

[47] Horatio Greenough, *Form and Function: Remarks on Art, Design and Architecture*, University of California Press, Berkeley, 1957, pp. 20–21, being a reprinting (in paper-bound edition) of *Memorial of Horatio Greenough*, edited by Henry T. Tuckerman, Putnam, New York, 1853.

[48] See especially his summary of general views on urban development: Le Corbusier, *Propos d'Urbanisme*, Bourrelier, Paris, 1946.

However, he was less Utopian, perhaps, than Ebenezer Howard, the prophet of the garden city.

The emphasis on the garden, the green, the open space in twentieth-century urbanism is quite significant. As the density and mass of the various cities neighboring on one another in Megalopolis have increased, *the need for recreation has grown also, especially in terms of the space devoted to it*. A new function has thus appeared in the expanding gamut of urban uses of the land – recreational space for urban crowds.

In the past, such use of land was a great luxury. Only the wealthier or more powerful people could afford to set aside pieces of land just for their own enjoyment, like the vast gardens and parks designed after the Renaissance for Florentine princely merchants, French kings and counts, or English barons. For such wealthy persons, even the greatest artists, such as Leonardo da Vinci, were called upon to design parks, and gardening became a great and respected art. The principles then laid down for parks and gardens seem to have influenced city planning to this day.[49] But it was only in the nineteenth century that the need for the recreation of large urban crowds made imperative the establishment of parks in the cities and around them. In the capitals of Europe grounds set aside in previous centuries for the pleasure of the reigning families were often thrown open to the public and became city parks (thus the Luxembourg Gardens in Paris, Kensington Gardens in London, and the suburban Forêt de Soignes next to Brussels or the Forêt de St. Germain near Paris).

In the cities of Megalopolis, however, other kinds of land had to be found for parks. At a very early time (in the 1850's) New York City set aside land for the impressive expanse of Central Park. Land for Prospect Park (in Brooklyn) and Bronx Park was obtained by the purchase of large private estates in 1859 and 1884 respectively. The Bronx and Brooklyn had to emphasize the educational value of botanical gardens in order to set up more large parks. The District of Columbia took advantage of a valley too steep for buildings and established Rock Creek Park. The size and mobility of the Megalopolitan crowds, early motorized, have made it unnecessary to keep the major recreational grounds immediately adjacent to the major residential concentrations. Parks have been scattered at some distance, maintained by state or local authorities, but within easy driving reach from the great nuclei of crowding. The average urbanite wants also

[49] Pierre Lavedan, *Histoire de l'Urbanisme*, Vols. 2 and 3, Henri Laurens, Paris, 1947 and 1952; and Jean Gottmann, "Plans de villes des deux côtés de l'Atlantique," in *Cahiers de Géographie de Québec*, Vol. III, No. 6, April-September 1959, pp. 237–242.

to have hunting grounds preserved for him conveniently near his residence (a privilege reserved for feudal lords in the Old World until a few generations ago),[50] and he often goes boating or fishing and indulges also in winter sports.

More leisure and more means for recreation, now available to the common people in this area, create an enormous problem in terms of the space to be allocated for these functions. The spaces that seem empty along the Northeastern seaboard and in the hilly ranges bordering on Megalopolis may help to meet this need (some sections have already been put into public parks, state forests, or reservations), which the green space available within urbanized districts could not satisfy. To some extent it might be claimed that the spread of detached one-family houses in suburban areas, with patches of green around them, and all the recent trends toward a symbiosis of urban and rural land uses [51] meet this need of open space for the recreation of every family, especially if it has small children. For most of the suburbanites, however, these small gardens or lawns around their homes, while improving the conditions and landscape of daily relaxation, do not fully satisfy the urge for recreational activities that require more space.

Thus in some parts of this vast area the uses of the land create sharply differentiated and specialized districts while in others they interpenetrate and mingle so much that they cannot help causing adverse reactions, such as the fencing off of various areas in an effort to reserve them for their proper occupants, the owners or tenants, and to defend their privacy and property against intrusion that may also threaten the land values. Thus the farmer posts his land against hunters, and the urban community resorts to zoning and other legal devices such as the incorporation of villages, the establishment of country clubs, and the like.

Such a partitioning, aiming at stabilization and conservation, is in many respects necessary. Zoning legislation in the urbanized areas is an indispensable foundation for organizing the community and its land space from within, preventing anarchy through various *limitations on the use* of the land. It has been traced back in American legislation to the ordinances of colonial days that banished powder mills and stores from the vicinity of dwellings in Boston (1706) or set up limitations on buildings to secure better fire protection (Boston, 1692).[52] The first comprehensive zoning regulation in the United States was enacted in 1916 by New York City. In 1920 Congress passed a zoning law for the District of Columbia, and by the 1950's zoning laws regulated almost all the densely settled districts in the country.

[50] See Chapter 7 above, pp. 341–383. For the past history of city parks see Paul Zucker, *Town and Square: From the Agora to the Village Green*, Columbia University Press, New York, 1959.

[51] See Chapter 5 above, pp. 217–257.

Zoning, however, cannot and should not be thought of only as a tool for conservation and stabilization. It has been recognized by many courts throughout the United States as aiming at protecting the future as well as the present.[53] The future of land use in a region such as Megalopolis, and in each of its growing and changing cities, is obviously endowed with great fluidity. Zoning has the great advantage of providing for such fluidity if needed, and for being administered on the local, usually the municipal, level. Land use here again appears as one of the essential resources of a community by which it may provide for its well-being and "well-growing." Zoning should thus express the community's intent, its wisdom, and its resourcefulness.

It becomes obvious at this stage that the land-use patterns, which have been and still are changing rapidly in Megalopolis, cannot be determined or administered according to simple formulas dealing with location, density of occupation, or immediate profits to be earned. Many forces and principles are at play that cannot be quantified. We have to describe land use in broad terms and major categories. The inner details and the orientation of their evolution must be considered in the light of a full understanding of the region's activities and modes of life, of the economic and social structure of its component communities.

The recent revolution that has occurred in land use in Megalopolis stems from deep changes in the ways and means of the local society, and some of these have been applied to the use of the land, vast but not unlimited, with that Promethean impulse characteristic of Megalopolitan tradition and momentum. The space available to the people has been devoured in some sections vertically, in others horizontally, and in still others by being emptied and abandoned to undesirable kinds of flora and fauna. But Megalopolis has reshaped its environment more than once and will not stop at this stage. Among the recent trends of change the renewal of the cen-

[52] James Metzenbaum, *The Law of Zoning*, 2nd ed., Baker, Voorhis & Co., New York, 1955, 3 vols., especially Vol. I, Chapters 1 and 2.

[53] See on this score Gallion and Eisner, *The Urban Pattern, op. cit.*, Chapter 11; Metzenbaum, *op. cit.*; and Richard L. Nelson and Frederick T. Ashman, *Real Estate and City Planning*, Prentice-Hall, Englewood Cliffs, New Jersey, 1957, especially Chapters 18 to 22.

tral districts in the larger cities is a significant symptom. It points to new functions presently congregating in the hub of the modern metropolis.

The old "mix" of activities, inherited from the nineteenth century, and consisting mainly of manufacturing, retail and wholesale trade plus some government offices, is replaced by a different congregation of businesses. The new "mix" consists of activities pertaining to finances, industrial management, research, education, government, and entertainment. The first and last of the fields mentioned have been associated for ages. The mutual attraction of research and education on the one hand, and financial and industrial management on the other, appears as a newer feature and a promising one. The new "mix" of functions for a great metropolitan "downtown" requires novel centers, stadiums, laboratory and school buildings. The imperative necessity of satisfying this trend will grow more obvious as we turn to a study of the economic functions of Megalopolis.[54]

[54] Not every city in Megalopolis can easily develop in its central district the new mix of activities on a substantial scale. As trade and manufacturing stop growing or, sometimes, move out, a number of medium-size cities lose much of their activity, and begin to question their *raison d'être*. In as dynamic a region as Megalopolis has been, with a constant remaking of the economic system that sustains the population, local soft spots are bound to appear. Not every part of Megalopolis is necessarily growing and progressing even though the region as a whole is doing so. There have been in recent years several "depressed areas" within Megalopolis, in places where adaptation to the economic changes was more difficult to achieve. The coal-mining towns of eastern Pennsylvania and some of the textile towns of Massachusetts and New Jersey have been clear examples, for reasons rooted in the evolution of the industry on which the local economy was founded. It is difficult in this volume, concerned mainly with the region as a whole, to account for each particular component of it. (See National Planning Association, *Depressed Industrial Areas – A National Problem* (Planning Pamphlet No. 98), Washington, D. C., January 1957.

PART THREE

EARNING A LIVING INTENSELY

The preceding chapters of this study have been concerned mainly with the historical processes by which Megalopolis has become such a huge concentration of people, economic power, and activities, and then with the present uses of the land over its vast area. In other words, we have tried to describe the genesis and present structure of Megalopolis. The sketching of the dynamics of past growth gave little opportunity to deal with the economic foundations on which the present prosperity of this region rests, although the formula of the "economic hinge" helps to make clear the general principles of the regional economy and its great emphasis on large-scale commercial business. Now comes an analysis of the ways, industrial and commercial, by which the Megalopolitan people make their living.

The modes of life described in connection with the uses of land suggest