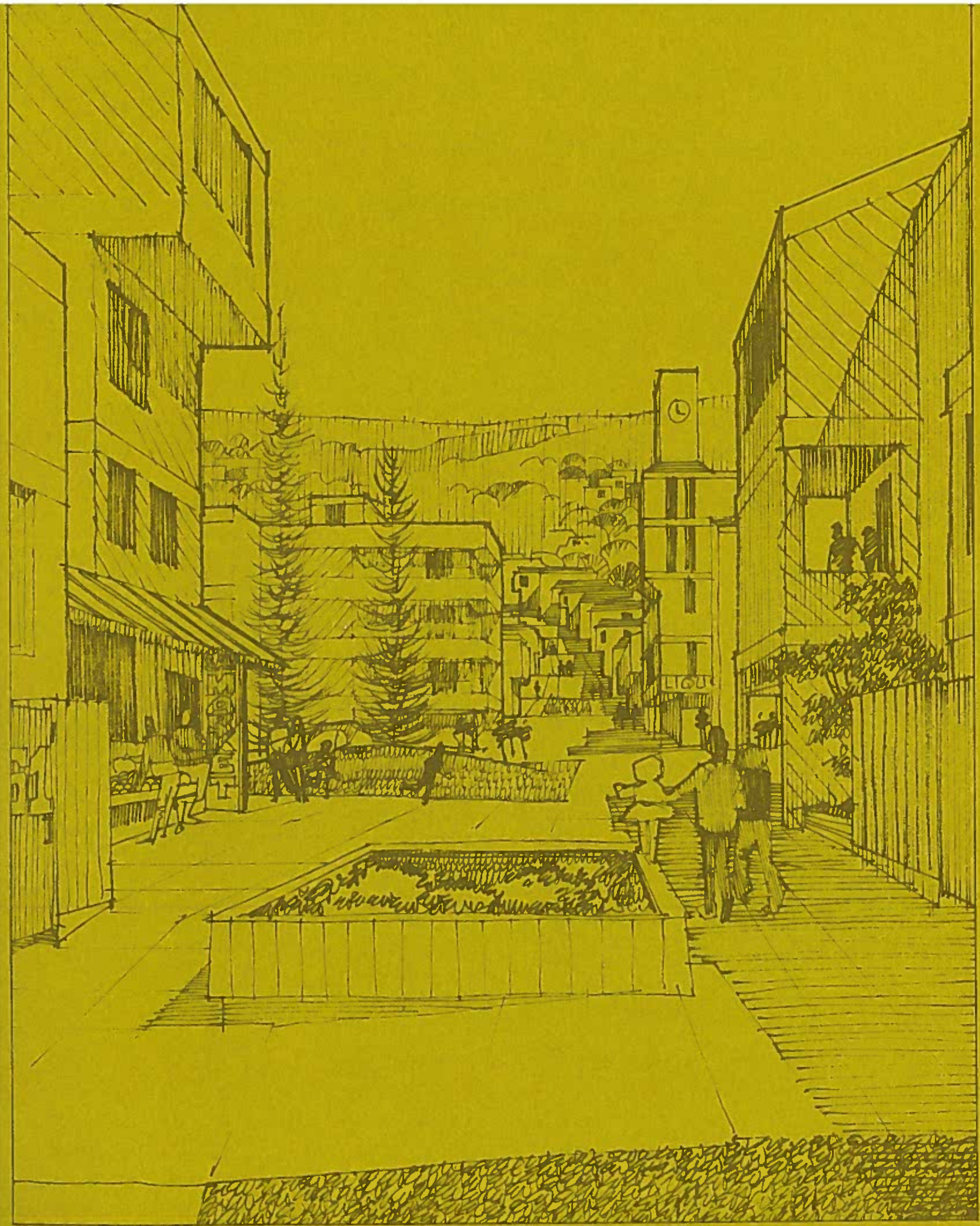
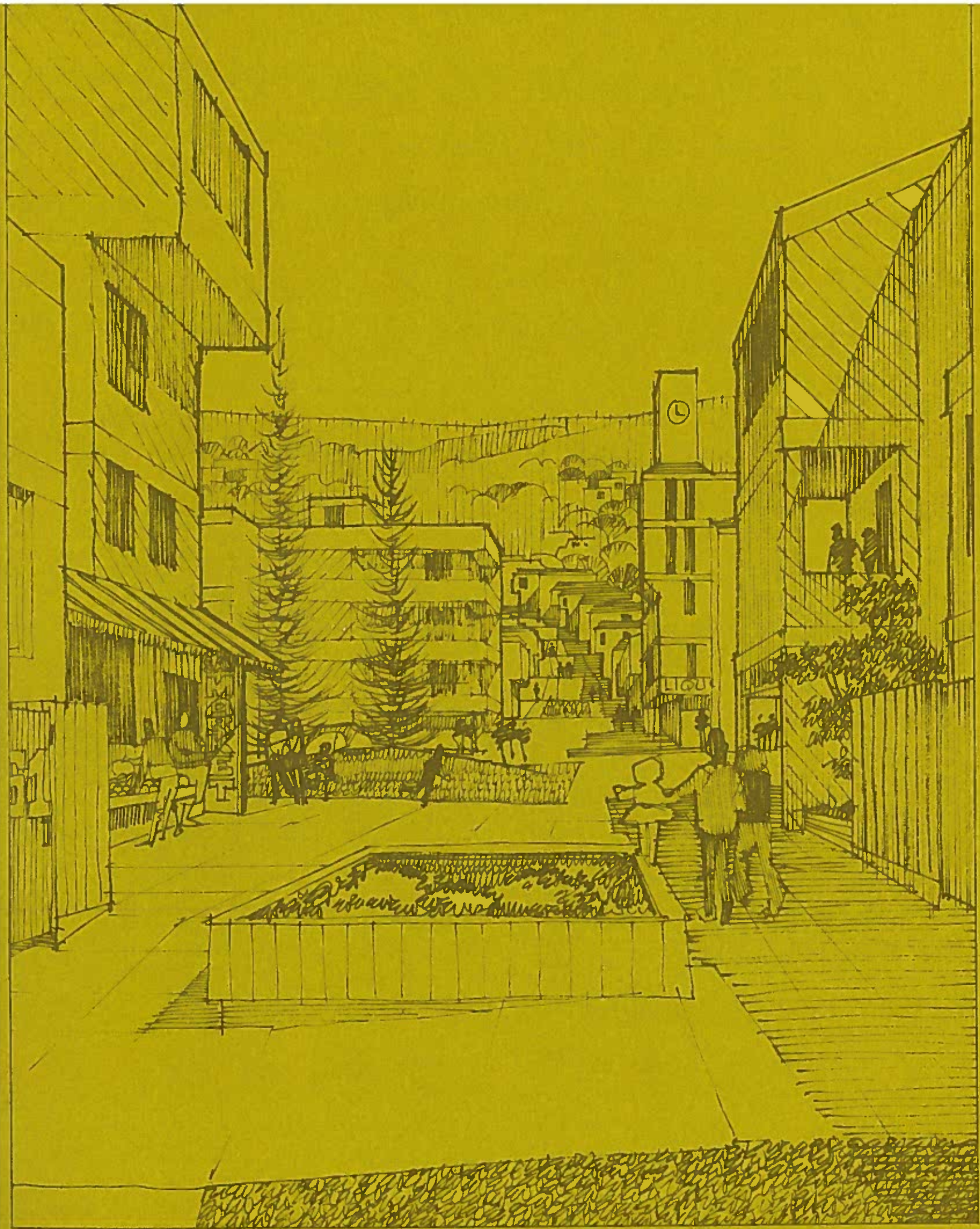


Ramapo Mountain

a new community in Mahwah, New Jersey





GARDEN CITIES DEVELOPMENT corporation

September 6, 1972

Township Committee of the Township of Mahwah
Planning Board of the Township of Mahwah
Municipal Building
213 Franklin Turnpike
Mahwah, New Jersey

Ladies and Gentlemen:

Garden Cities Development Corporation hereby makes formal application to the Township Committee of the Township of Mahwah to amend the Mahwah Township Zoning Ordinance and Zoning Map to permit development of a mixed-income, planned community in the Township.

Garden Cities wishes to develop a community of six thousand townhouse and garden apartment units on 720 acres of its land in Mahwah. The housing is intended to respond to the compelling local, regional and statewide need to house the elderly; young married couples and other young adults; those families of low, moderate and even middle income who cannot now afford housing on the private market; and, particularly, employees of Mahwah's many commercial, industrial and educational facilities. Our housing is intended for all those who would like the opportunity to live in a beautiful and environmentally sound community planned on a human scale with recreational facilities, shopping, and community services all within easy walking distance.

and commercial facilities throughout Ramapo Mountain, as shown on the accompanying site plan, to serve the needs of the community's residents. (Our plans would limit commercial development to 7% of the total floor area in the community.)

Garden Cities would be pleased to use its expertise and that of its consultants to work with the Township in developing an ordinance in accordance with the points made above. If the Township desires, we will provide Mahwah with a draft ordinance. It is our wish to work with Mahwah to develop an economically and racially mixed community of which the Township and the entire State of New Jersey can be proud.

Submitted with this formal application are our site plans, utility plans, and development plans.

We are confident that we will be able to work with Mahwah to develop a beautiful, exciting community which will truly serve as a model for further development in the United States.

Respectfully yours,



Neil N. Gold
President

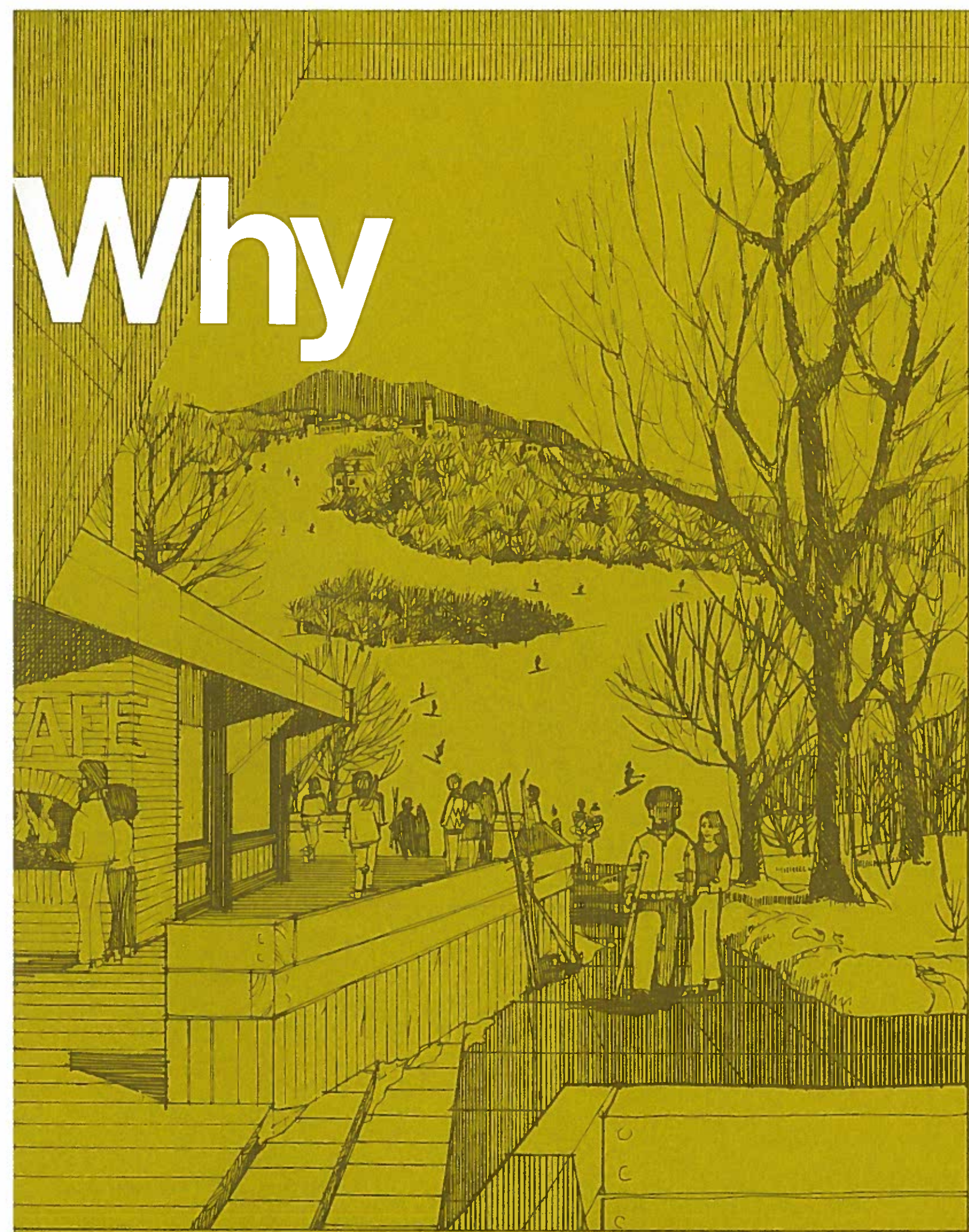


Paul Davidoff
Chairman of the Board

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Why



Introduction

Ramapo Mountain is a new community proposed by Garden Cities Development Corporation. It will be located in Mahwah, New Jersey, thirty minutes from New York City.

Ramapo Mountain will be architecturally and socially unique. The elements of the plan are functional and harmonious: functional in that they enhance the life and leisure of a community of almost 19,000 people; harmonious with each other and with the site that contains them.

Ramapo Mountain will be an economically and racially integrated community. It will offer housing for the rich and the poor, the young and the old, student and worker.

Ramapo Mountain will be built in a suburban area. Yet it breaks with the existing suburban pattern of expensive, single family dwellings or drab apartment projects. Because housing prices at Ramapo Mountain will be below the present market for suburban housing, the new community will offer the advantages of suburban life to those who are now excluded because they don't have enough money. At the same time, Ramapo Mountain brings to suburban life

what it conspicuously lacks: the services, facilities, and entertainments that are now found mainly in America's cities.

Ramapo Mountain addresses itself to two urgent problems of modern life. One is to provide a decent environment for every family at a reasonable cost. The other has been characterized as the "quest for community." It is the recognition that in a large, complex, and depersonalized world, human beings require a counterbalancing environment: a place to live that emphasizes people—the value of the individual and of human interaction.

The need for such a community, the planning that has gone into it, the impact that it will have on Mahwah and the region, are presented in the following pages.

The need for Ramapo Mountain

Even if it did nothing else, Ramapo Mountain would be justified as part of the solution to the serious housing crisis affecting the millions of people living in the New York metropolitan region.

In the New York-New Jersey metropolitan area, people, wealth, and jobs are moving to the suburbs. This is a national pattern that began after World War II and that has been accelerating in recent years.

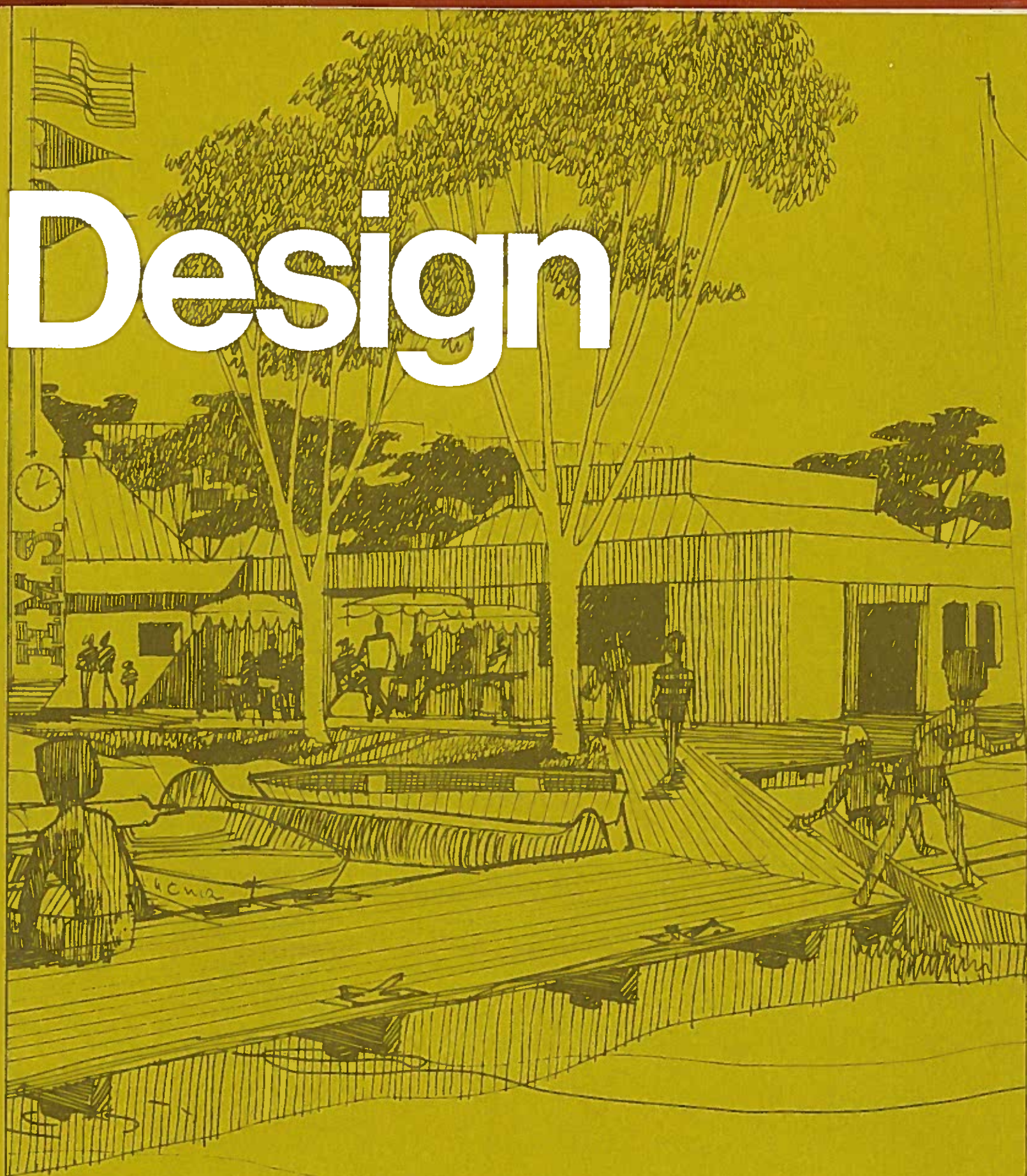
Between 1959 and 1967, New York City lost 70,000 factory jobs. During the same period, the suburbs around the city gained 140,000 blue-collar jobs. By 1968, the suburbs contained almost half of **all** employment, and more than half of the blue-collar jobs.

While jobs move to the suburbs, people with low and moderate incomes are trapped in the central city. They stay not because they want to, but because they cannot find suburban housing at prices they can afford. Many of them attempt the grueling routine of "reverse commuting," to try to reach the factories and jobs that have located themselves outside the city. Others are condemned to unemployment, and become less able than ever to afford housing in the suburbs.

The workers who are now excluded from the suburbs are white, black, and Spanish-speaking. The ghettos in which they live continue to spread, driving cities like Newark to the brink of bankruptcy. To these must be added the elderly, whose pitiful condition in the central cities is a disgrace to America. Finally, there are those whose condition is not desperate, but who want neither an apartment in the city nor an expensive one-family house in the suburbs, and who seek some way of combining the advantages of both.

It is to serve the needs of these people that Ramapo Mountain has been created. It is designed to show that the housing crisis can be ended, to benefit not only city dwellers but also the suburbs themselves.

Design



Planning goals at Ramapo Mountain

Ramapo Mountain will be

- an open community
- a community of workable size
- a community designed for all age groups
- an active community
- a community that is environmentally sound
- a good neighbor

☐ **An open community:** Ramapo Mountain will provide housing for rent and for sale, at a variety of costs, to families of every income and background.

☐ **A community of workable size:** Ramapo Mountain will be small enough to maintain a sense of group involvement, and large enough to support a vigorous social and cultural life. It will be a community of 18,000-19,000 people, with identifiable centers and neighborhoods.

☐ **A community designed for all age groups:** Ramapo Mountain has been planned with the conviction that people should not be segregated by age, that a healthy community includes the young, the middle-aged, and the elderly.

☐ **An active community:** Ramapo Mountain will mix residences, shops, offices, and other community facilities to stimulate activity in neighborhood centers. Every resident will find a wide range of recreational, cultural, and creative facilities within walking distance. A portion of Ramapo Mountain will remain deliberately unplanned, so that a growing community can participate in the shaping of its environment.

A community that is environmentally sound:

Ramapo Mountain has been designed to preserve and enhance the natural terrain on which it stands. Its site offers a large amount of open space, surrounded by state- and county-owned parkland. The development plan calls for careful treatment of the flood plain, steep slopes, and other natural features. Sewage generated by the community will undergo three-stage treatment.

Under consideration is a total solid-waste recycling system that will produce enough rich topsoil to repair now-barren gullies and to rebuild abused flood-plains.

A good neighbor:

Ramapo Mountain will not only blend in with the natural environment, it will also invigorate the economic and cultural life of Mahwah. In cooperation with the major institutions in the town—Ramapo College, Ford Motor Company and the United Auto Workers, and the township government—Ramapo Mountain

will offer a wide variety of educational, recreational and cultural facilities.

A special effort will be made to establish close cooperation with the rich resource of Ramapo College. Housing will be made available to students; and part-time jobs will be plentiful in the new town center. The College can be an educational and cultural resource providing adult education and technical training, as well as lectures, concerts and other events. Teachers' aides, day care instructors, and other educational personnel can be recruited from the growing college.

Ramapo Mountain will also become a center for economic growth. Over 1800 jobs will be created within the community alone. Goods and services consumed by the new residents will also stimulate the existing economy.

To be a good neighbor, however, the new community must not place an intolerable burden on the existing tax structure. Ramapo Mountain will add only minimally to the already low taxes in Mahwah. Community facilities, including swimming pools, libraries, recreation centers, ski runs, daycare centers, and perhaps even a new town hall, will be available to the entire community of Mahwah.

The site

The 720 acre parcel of land selected by Garden Cities Development Corporation for Ramapo Mountain is a dramatic natural landscape with trees, broad open spaces, an abundance of water, and magnificent views from ridges and slopes. The site is large enough to build a community of relatively low density with a variety of community services. Yet it does not sprawl, but is unified and self-contained. Moreover, the land is developable; it will easily encompass a community of at least 6,000 dwelling units.

Roughly rectangular, the site measures about a third of a mile from north to south by a mile east to west, easy walking distance for future residents. The site lies only a mile from the Ford Assembly plant, a major employment center. Serviced directly by major highways such as I-287, the New York State Thruway, and Route 17, the site offers easy access to the entire region. State and county parklands border on the site, ensuring that the new community will be effectively surrounded on three sides by a permanent green belt.

Natural features of the land divide the site into several distinct areas. The Ramapo River runs through the eastern third of the land. Along the riverbanks, the site is generally level, open, and meadow-like, spotted here and there with groves of trees. Part of the flood

plain has been mutilated by dumping and gravel quarrying, yet some of the pools formed by the quarrying have good potential as a recreational resource.

The rest of the site is heavily wooded. Woodlands extend into Havemeyer Hollow and include the north slope and summit plateau of Monroe Ridge. Havemeyer Creek runs along the bottom of the Hollow and opens into a small reservoir. From the valley floor the land rises to the top of Monroe Ridge in a broad, even slope. From the hillside and the summit, views look out over the river and the surrounding countryside.

The land displays a wide variety of terrain, with the Ramapo River, Havemeyer Brook, the Hawk Rock outcroppings, and Cat Swamp standing out as special natural features.

Site analysis

In order to plan an environmentally responsible community, it was necessary to identify the problems and potential of the land. Analysis of the site included detailed studies of soils, drainage, topography, and vegetation.

Topography: Both the land surrounding the Ramapo River and the plateau above Monroe Ridge have slopes of less than 10 percent. The Havemeyer Brook also runs through a long thin area of level land. To the northwest, land is generally level around small streams lacing the area, but varies considerably outside the stream bed regions. The southeastern face of Monroe Ridge contains the bulk of steep

slopes, rising to 30% grades in some places. The northeastern slope of the ridge, however, rises gently and consistently.

Drainage: Drainage problems at the site were simplified because the land lies almost entirely in a single drainage basin. Few areas of high water table intrude on the site. Some natural drainage-ways have been established on Monroe Ridge and in the northwestern section of the site. Havemeyer Brook is a clear, year-round stream. Very little suspended material is present in the stream, although some silting has occurred in Havemeyer Reservoir. The periodic rapidity of currents in the Ramapo River suggests that the bank should be stabilized at several points, but the River presents no major obstacle to development. The existing water, rated as New Jersey Fresh Water 2, is amply available and of good quality. It can easily be treated for consumption, and is excellent for all types of recreational uses.

Soils: Test borings and other methods of analysis reveal that soils on the site present no severe constraints to development. These sandy and gravelly soils, similar to Merrimack or Gloucester soils, provide good foundation support. Though sandy, the loam along Monroe Ridge is rich enough to support excellent woodland growth and other landscaping. Surface boulders can be found on steeper slopes and near the surface of other small areas.

Bedrock varies in depth from the surface to more than 20 feet. Exposed

bedrock, however, comprises only 1-2% of the site. Deeper soils, of course, lie on the flatter slopes and near the river, yet soils on Monroe Ridge are deep and developable.

Vegetation: Wooded areas of the site are covered with a uniform stand of mixed northern hardwood forest in a stable climax stage of maturity. Although smaller trees predominate, a few large specimen trees exist. A limited number of species constitute the forest, with oaks predominating on the higher elevations. Beeches are most prevalent on the slopes, and maples, sycamores, tulip trees and basswoods grace the lower creek areas. The site supports no evergreen vegetation.

Development suitability

The development suitability diagram represents a compilation of site analysis data, and has guided the preparation of all detailed plans for Ramapo Mountain. The diagram shows three areas of superior development potential. These lie on either side of the Ramapo River and at the top of Monroe Ridge. Most of the slope of the ridge, and the land along the edges and at the head of Havemeyer Hollow, are nearly as buildable. Other parts of the Monroe Ridge slope and the northwest area of the site can accommodate scattered development. The only parts of the site that present real limitations are the flood plain of the Ramapo River, the steep slopes in the Hawk Rock Area, and the areas of ledge and rock outcrop in the northwest corner.

In planning the pattern of residential and community life at Ramapo Mountain, two possibilities presented themselves:

1. To distribute housing more or less uniformly over the portions of the site suitable for development;
2. To create, within the overall framework of the plan, smaller units of iden-

tification: "neighborhood areas" that would serve as points of focus around which housing, shops, schools, and other community facilities could be clustered.

The decision to take the second course was strongly influenced by the realization that modern housing development in both cities and suburbs has failed to give the individual a sense of belonging and a sense of place. Only when a human being can see his community as an extension of himself—only when it is small enough for him to walk its borders, to sense its shape, to "handle" it psychologically—can he achieve a sense of belonging.

Neighborhoods and centers

Neighborhood definition at Ramapo Mountain emerges from social concern and the nature of the land itself. As the accompanying diagram shows, the varied landscapes of Ramapo Mountain suggest a variety of "neighborhood areas," each with its own special character.

The Ramapo River and its flood plain divide the flat, open lowlands into two areas. The eastern side of the flood plain is related to Ramapo College as well as to access points to Ramapo Valley Road, Darlington Avenue and the proposed east-west connector. This neighborhood area will have both stores and residences, with an emphasis on college-oriented facilities.

The western side of the flood plain is more central to the site. This neighborhood area serves as the focus of the community, containing Ramapo Mountain's community center, its concentration of stores and offices, and "in-town" housing.

Havemeyer Hollow provides natural open space for neighborhoods on its fringe. The Monroe Ridge slope offers striking views to the bulk of residential housing that will be built at varying densities, according to the steepness of the slope. As an extremely suitable area of development, the summit plateau will have mixed residential and commercial development as well as a large open recreation area.

It should be emphasized that the neighborhoods shown abutting each other are, to a degree, arbitrary. Real neighborhoods are ultimately established not by planners but by people who live there.

In order to create distinctive neighborhood possibilities within Ramapo Mountain, no attempt has been made to impose a standard development pattern on the varied terrain. Some of these "neighborhood areas" will be large with many activities centered in them, some will be small and purely residential. From the combination of landscape, dwellings, and the mixture of personal activities, residents themselves will fashion individual neighborhood identities.

Within easy walking distance from every home at Ramapo Mountain will be either a neighborhood center or a residential square. The neighborhood center is a nucleus where shopping, schools, and community facilities are located. A typical center might include a convenience grocery store, a hardware store, a liquor store, and a drug store. Churches or neighborhood meeting halls will also be clustered in the neighborhood center. A corner pub or

open-air cafe might also be located in the center. Some centers will include professional offices and the neighborhood elementary school. A day-care center or small play-yard where mothers could leave children while shopping might also be placed in the center, since cars would never intrude there. All these buildings will be formed on a plaza, where neighborhood events can take place. Finally, space will be allotted in the centers for future development, leaving plenty of room for future residents to plan their own facilities.

A residential square will be a small park surrounded by dwellings. In some cases it might also contain a small variety store, or a site for a church or social hall. The park would be a quiet place to sit, and a safe place for children to play.

Communications

Although the site for Ramapo Mountain is divided into neighborhood areas, the community will be unified by systems of walking streets, trails, service roads, and other connections. Access to the highway network of the region will be simple and direct.

As the communications diagram illustrates, the network of connections focuses development on people and their activities rather than on automobiles. A broad central street for pedestrians is the principal artery of the community. Unimpeded by automobile traffic, it runs from Ramapo College and Ramapo Valley Road up to the Monroe Ridge summit. The broad walkway crosses the flood plain on a bridge-like structure, containing shops, community buildings and offices, passes through the community center at the base of Havemeyer Hollow, then climbs gradually to the top of the ridge, intersecting neighborhood centers and residential squares on the slope. At the western edge of Havemeyer Reservoir, a walk branches off to connect neighborhoods at the upper end of the Hollow with the main artery. From these two major pedestrian streets, smaller walkways lead to parking areas.

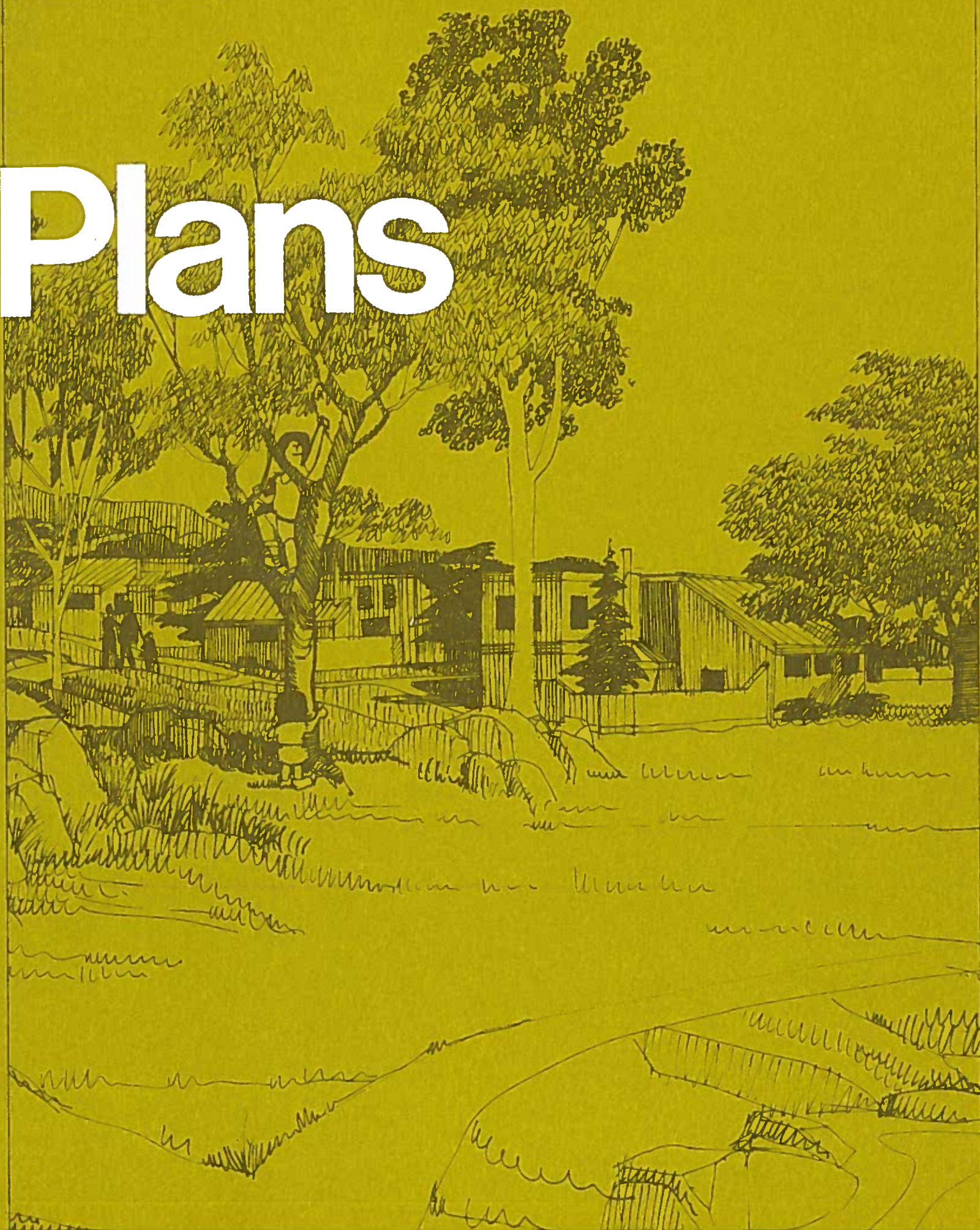
A special feature of the pedestrian system is a stairwalk which runs directly downhill from the neighborhood center at the top of the ridge, through a residential square midway down the slope, to the town center at the very bottom. These pedestrian streets are also

complemented by a network of trails which link open space with the developed areas.

Automobile circulation is handled on the periphery of the community by a system of loop roads and cul de sacs. Public transportation, however, will be encouraged, with special buses running to the Ford plant and other employment centers in the area. Within the community, a mini-bus or "people mover" system will operate along the main pedestrian street and up the Hollow. The ski-lift will be a year-round operation, providing a way for people living on the hill to get a quick ride home from the community center.

The community's emphasis on walkways will mean that children need never encounter traffic on their way to school or to the store. Although cars and trucks will have access to commercial and office areas for deliveries and quantity shopping, the community is designed so that every trip need not be made by car.

Plans



Illustrative master plan

The illustrative master plan depicts the physical dimensions of the new community. It has grown from the planning objectives, detailed analysis of the site, and the application of patterns of neighborhoods and circulation.

The plan is based on the concept of cluster development. Clustering generates higher densities than those presently permitted in Mahwah, but results in more usable open space. With most structures located on easily developed land, the community plan permits the dedication of steep slopes, wetlands, and the flood plain to permanent open space.

Cluster development has other advantages as well. Public transportation functions more efficiently. People will be closer to things they need and they will be able to walk to get them.

Though primarily a community of multi-family housing, Ramapo Mountain will avoid the drab sameness usually associated with multi-family development. Ramapo Mountain draws from the best aspects of both urban and small-town life. It reflects urban life in its busy walking streets, its visual variety, the sense of neighborhood, and the mixture of people and their activities. It draws as well from the small-town center where large open areas are immediately accessible to the building clusters. In one community, Ramapo Mountain combines the advantages of urban and country life.

Social use plan

The Social Use Plan is distinguished from traditional land use maps in that it demonstrates the mixture of activities taking place in the neighborhoods and centers. By mixing different land uses as well as people and activities, Ramapo Mountain will foster an active sense of community. The new community will not only mix different income groups and a variety of dwelling types, but will also integrate commercial, community and recreational facilities into residential neighborhoods. The entire community will relate to the Ramapo College campus as well.

So that people coming to Ramapo Mountain will have a wide range of choice in the way they want to live, housing will be arranged in a variety of ways. A full range of unit sizes will be available to all income groups, ranging from one-bedroom to four-bedroom homes. Certain areas will mix activities; others will be purely residential. Living over a store, for example, might appeal to students or to young married couples. An attached house with its own yard will probably be more desirable to a family with young children. Elderly peo-

ple may choose an "in town" apartment in order to be conveniently close to shops and other services; or, seeking lives of greater privacy, they may want a home adjacent to a large open space. While the design makes some assumptions about possible preferences of different groups, it in no way insists on them. Each neighborhood in Ramapo Mountain will be as diverse as its total population.

Open spaces

Ramapo Mountain will be a community with a generous amount of open space. As a result of clustering, ground coverage by buildings will amount to only 10.5% of the land area. A significant portion of the remainder will be set aside for recreational uses and natural open space.

"Site coverage"

The proposed development is compatible with the landscape. Roads follow the lines of the topography, steep slopes have been left undisturbed, and trees have been saved wherever possible. The Ramapo River and other water bodies in the community will be a central part of the open space plan.

The Ramapo River and its flood plain provide the focus for recreational open space in the eastern portion of the community. Ball fields, tennis courts, school playfields and other open air facilities will help smooth out the areas of dumping and gravel quarrying. One of the ponds will be deepened and made into a lake for boating and swimming. The river itself will be left undisturbed.

Havemeyer Brook and Reservoir will be protected by surrounding open

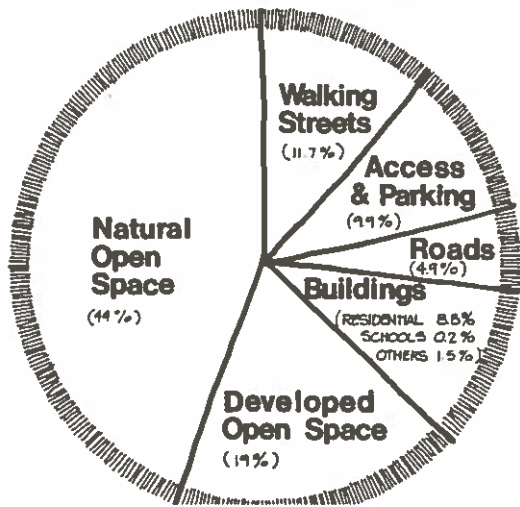
space, as will the Cat Swamp portion of the site. The steep slopes around Hawk Rock will provide the setting for a unique element in Ramapo Mountain's open space plan: a ski area with year-round lift.

In the neighborhoods, smaller, more landscaped open spaces are planned. Public squares, large and small, will serve to open up the neighborhood centers. Small parks with some recreational facilities will also be placed within residential clusters.

Within the clusters, housing will be arranged so that each owner will have a private backyard or garden. But these areas will also open onto larger courts and small parks to give children a place to play without fear of cars. The courtyards will be supplied with play equipment and outdoor fireplaces and will provide common ground for neighbors to get to know each other.

Ramapo Mountain will provide all these types of open spaces—from private gardens to natural woodlands to a ski slope—as part of living in the new community. Land will be maintained by a residents' association and will remain open permanently.

"Site coverage"



Utilities plan

Based on a preliminary water and sewage study, diagrammatic plans for meeting the utility needs of the new community are shown.

Water supply: Based on the estimated population of approximately 18,000 people the demand for water would be as follows:

- 1) 1,800,000 gallons per day annual average daily flow.
- 2) 2,700,000 gallons per day maximum.

To meet the demand of the maximum day, a water supply with a safe yield of 2.7 million gallons daily is required. Variations in demand during the 24-hour period of the maximum day will have to be met from system storage facilities. Approximately 3 million gallons daily storage should be provided in the system.

Two alternatives are available for water supply:

- 1) Purchase water from the Mahwah system.
- 2) Develop new wells within the site on the Ramapo River.

The Mahwah system is a 14-inch water main that presently terminates in the vicinity of the development. The main is estimated to have a capacity of 2500 gallons per minute (3.6 million gallons daily) with a residual pressure of 125 pounds per square inch. The Mahwah system does not presently have a supply system that includes this capacity. If the development needed the full capacity of the 14-inch main, new wells would have to be developed by Mahwah. It is understood that the present regulations of Mahwah require that all new subdivisions pay \$330 per dwelling unit

for the use of the water system. For this price Mahwah will build the necessary wells, booster stations and transmission lines but the developers have to build the distribution system.

The alternative of developing an independent system of wells in the sand and gravel deposits along the banks of the Ramapo River is possible. A sub-surface and well exploration program is required before the possibility can be clarified.

Because of the change in elevation from 250 feet at the River to 870 feet at the high point, the distribution system should be subdivided into four pressure zones as follows:

- 1) Low pressure, maximum hydraulic gradient 440 feet.
- 2) Intermediate pressure, maximum hydraulic gradient 630 feet.
- 3) High pressure, maximum hydraulic gradient 820 feet.
- 4) Very high pressure, maximum hydraulic gradient 960 feet.

This subdivision of the distribution system will require storage facilities for each zone and booster stations between each zone.

Sewerage and sewage treatment:

As in the case of water supply, there are two possible alternatives for sewage disposal:

- 1) To discharge the development's sewerage into the Northwest Bergen County Sewer Authority System.
- 2) To treat the sewage at the site for discharge to the Ramapo River.

The first alternative has an important time element. An intercepting sewer is in the planning stage for the Mahwah area. The sewer follows the route of the Ramapo River and will pass through the planned development. Although it is not possible to set a precise time schedule for the completion of the sewer, it will

probably take five years before it is constructed. If this estimate is substantially correct, the first alternative would conform well with proposed development time scheduling, requiring interim measures for the first 1-3 years of construction only.

The second alternative, involving discharge into the Ramapo River, will incorporate a very high degree of treatment, i.e. 97-99 percent BOD and suspended solids removal, and the complete stabilization of nitrogenous components. The latter would consist of a conversion of ammonia to nitrate and finally to basic nitrogen. The removal of phosphate nutrient will also be incorporated in order to protect downstream lakes from eutrophication.

The proposed treatment facilities would consist of multi-stage unit processes (Figure 1) and would generally include the following:

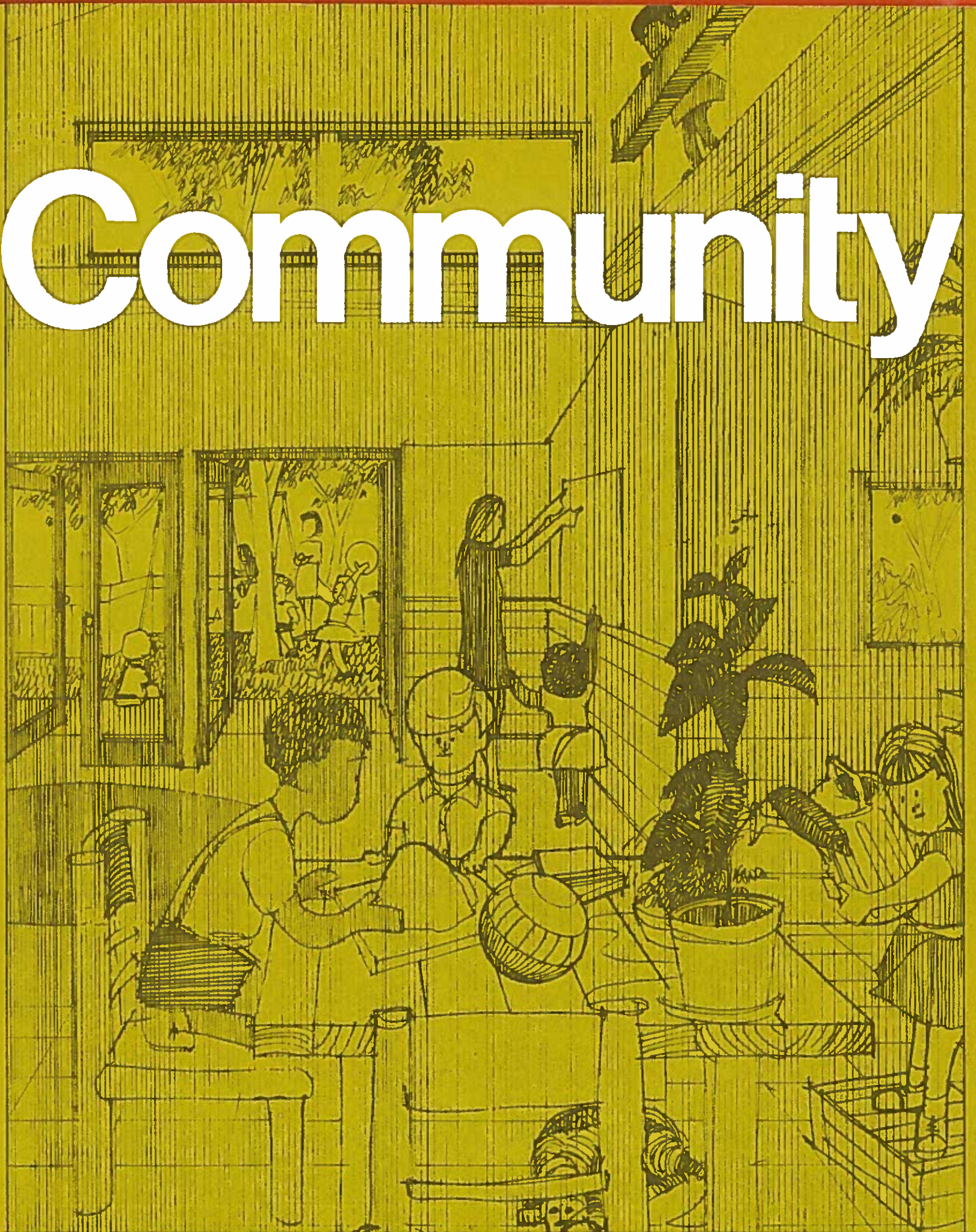
- 1) Screening and grit removal facilities upstream of a pump station. The pump station will raise the hydraulic level of the wastes in order to permit gravity flow through the remainder of the facilities and thence to the River.

- 2) Two stage biological treatment, the first for an extended period to allow for conversion of the ammonia to nitrate. The second stage would convert the nitrate to nitrogen. Phosphate removal would also be effected in this stage by the addition of an iron salt or alum.

- 3) Finally the wastes would be polished by a gravity filtration step and then disinfected by chlorine prior to discharge.

- 4) Waste sludge from the facilities would be aerobically digested and thickened prior to disposal.

Community



A sense of community

In developing Ramapo Mountain, every effort will be made to stimulate the close community involvement that can make a home more than just shelter. By providing a series of housing clusters and neighborhood centers, the physical arrangement of Ramapo Mountain focuses social and community life within the development. But physical planning can only do so much. A lively, racially and economically integrated community will need a variety of housing types, community facilities and services to meet its needs. Garden Cities Development Corporation looks forward to working with the new residents in developing not only buildings and facilities, but also services and programs to help make their lives more rewarding.

Housing

Central to the community is, of course, the housing offered at Ramapo Mountain. A new resident of Ramapo Mountain will have a choice of many different types of dwellings. Two thousand attached homes will be sold as condominiums. Approximately four thousand apartments of all types will be rented or sold as condominiums. The projected

distribution of these units is illustrated in the following table:

Distribution of dwellings at Ramapo Mountain

Type	Number	Bedrooms	Est. Sq. Ft.
Houses	600	2	950
	1,000	3	1250
	400	4	1500
Apartments	2,100	1	750
	1,500	2	950
	300	3	1250
	100	4	1500

Attached homes, courtyard houses and apartments will be interspersed, although any one kind may predominate in a particular area.

Attached houses share sidewalls with other units, but are self-contained from ground to roof. These homes may have two or three floors. They always open onto a private yard which, in turn, will be adjacent to larger parcels of commonly held land. Attached houses cover a small amount of ground proportional to their floor space, and their design makes them ideal for placement across sloping land.

The category of "attached houses" also includes "courtyard houses." Courtyard homes may have one or two levels arranged in an L shape around a private garden. Like the row houses, these units are particularly suitable for families with children. The walled courtyard offers more privacy than the backyards of the row houses. Courtyard houses will be built close to large areas of the site reserved as open space.

Apartments are arranged with living space on one level. Two and three story apartment buildings may be found in residential clusters or along the gentle

neighborhood centers, larger clusters of apartments with commercial, office and service establishments will provide a more urban setting. Older residents may prefer first floor apartments designed to make housekeeping, shopping and recreation safer and easier. Floor plans of the apartments will vary; exposures may be on one, two or three sides. Ground floor units may have terraces or yards. Some apartments in or near neighborhood centers will be located over shops and other commercial buildings. Young people who enjoy being in the center of activity will probably be attracted to these units.

The price of housing at Ramapo Mountain will be among the lowest in the metropolitan region. Since one of the major goals of the development is to provide housing at prices nearly everyone can afford, every effort has been made to reduce costs without sacrificing quality. As a non-profit builder, Garden Cities Development Corporation will utilize government financing to lower the cost of housing to families with low and moderate incomes.

Community services

Quality housing at a reasonable price will be only part of the attraction of Ramapo Mountain. Over \$15 million worth of community facilities will augment commercial and office space to provide a vigorous and enriching community life.

At the center of community life in Ramapo Mountain will be multi-purpose community buildings. Meeting rooms for all types of organizations, a large auditorium, a gymnasium, an outdoor pool and other facilities will be provided. Space for a public library, a community newspaper, and a small theatre will help to make Ramapo Mountain an interesting place for diverse groups of people to live. A firehouse with space for four trucks and an ambulance-service center with two vehicles will also be donated to the community. At least eight sites for churches and synagogues will be reserved in the neighborhoods, providing space for a diversity of religious groups.

Shopping and office space:

In the main town center and in the smaller neighborhood centers, such commercial facilities as restaurants, food stores, cinemas, and theatres will offer a full range of goods and services to the new population. Four hundred thousand square feet of commercial and office space are scheduled to be constructed at Ramapo Mountain. To make Ramapo Mountain as nearly self-suffi-

cient as possible, shops, stores, and services will be within walking distance of nearly every residence. Among the types of commercial facilities envisioned in Ramapo Mountain will be:

Stores

Grocery	Small Department Store
Hardware	Used Furniture
Sports	Small Craft Shops
Greenhouses	Health Food
Fabric	Liquor
Bakery	Bicycle
Camera	Furniture
Stationery	Drugstore
Toys	Clothing
Lumberyard	Bookstore
Specialty Stores	Florists
Appliance	Art Supplies
Record & Stereo	Co-ops
Sales	

Services

Gas Stations	Appliance Repair
Barber Shops	Banks
Beauty Parlors	Dry Cleaners
Funeral Home	Laundromats
Bicycle Repair	

Entertainment

Restaurants	Ice Cream Parlor
Fast Food	Art Gallery
Cinemas	Dance Hall
Bars	Small Theatre
Coffee Houses	Roller Skating Rink
Sidewalk Cafe	Pool Hall

Office space will be provided not only for the internal management of Ramapo Mountain, but also for a variety of public and private uses. The developers will allocate 60,000 square feet of office space

for use by the community, by U.S. and New Jersey government offices, and by private offices. Medical and dental offices will be coordinated with the overall health care system within the new community.

Impacts



The impact of Ramapo Mountain

Ramapo Mountain will have a significant impact in the community of Mahwah and in the region. This impact will not be an adverse one. Garden Cities Development Corporation has estimated the effect the population of the new community will have on taxes, municipal services, transportation in the area and the environment.

Population: When complete, Ramapo Mountain will be a community of approximately 18,700 people. This represents significant population growth in relation to the present size of Mahwah. Yet the people of Ramapo Mountain will not move in all at once. By phasing the construction over an eight year period, the developers can ensure a smooth growth of public services and tax revenues to accommodate the new residents. The following table illustrates the phased growth anticipated for the new community:

Population growth at Ramapo Mountain

Year	Units Completed (per year)	Estimated Population (cumulative)
1	0	0
2	820	2,550
3	840	5,180
4	790	7,670
5	948	10,600
6	887	13,400
7	888	16,200
8	827	18,700

Over an eight-year period, 6000 dwelling units will be constructed with an average occupancy of approximately 3.1 persons per dwelling unit.

Commercial space, offices and community facilities such as schools, day care centers and recreational facilities will be built along with residences in several phases. Every effort will be made to time the development of these

facilities so that adequate services are available when the new residents move in. Cooperation with local authorities, especially the Board of Education, will be necessary to prevent a mismatch between population growth and services.

Fiscal impact

As the population of Ramapo Mountain grows over the eight-year development period, the economy of Mahwah and the immediate region will expand along with it. Ramapo Mountain itself will generate about 1,800 jobs. Many other jobs will be created in Mahwah and in neighboring communities in response to the increased demand for goods and services from the 18,700 new residents.

Ramapo Mountain's commitment to accommodate people working in the Township will also stimulate the economy of the immediate region. Workers now living outside of Mahwah will have an opportunity to live in the Township. Mahwah's businesses will be able to capture a large share of the millions of dollars in payrolls that are now earned in Mahwah but spent outside.

As do other localities, the new community will require a wide array of public services. Many of these services will be provided through funds raised by local property taxes. The cost of many of these services, especially those having a geographical dimension, such as roads, police and refuse disposal, will not, however, be directly proportional to the size of the population. Significant economies resulting from Ramapo Mountain's compact development pattern and its special service features will serve to moderate the fiscal impact it might otherwise have upon Mahwah Township. Making up the difference between the cost of providing Ramapo Mountain with public services and the revenue col-

ected in property taxes will require a 15 percent increase in real estate taxes for all of Mahwah Township over the next eight years. This increase is not unreasonable; even with it, the property tax rate in Mahwah will be less than the average rate for suburban Bergen County.

The cost of public services

Public services supported by local property taxes are provided by Bergen County, the township, and the Mahwah School District. Education, which is administered by the Mahwah School District, consumes two-thirds of the taxes levied on property in the township. Local services, such as police protection, solid waste disposal, road maintenance, and recreation, are also financed through taxes imposed by the township. County services such as health and welfare are financed by a county property tax. Each level of services will be considered separately in assessing Ramapo Mountain's total impact on Mahwah's public service costs.

Education

The projected public school enrollment in Ramapo Mountain is 2,980. This calculation is based on the total number of school-age children expected to reside in Ramapo Mountain when it is

completed. The table below shows the derivation of this figure.

School-age children residing in Ramapo Mountain

Units with School-Age Children		Projected School-Age Children per Dwelling	Total School-Age Children
Number	Size		
2,100	1 BR	.036	76
1,600(a)	2 BR	.38	608
1,300	3 BR	1.25	1,625
500	4 BR	2.0	1,000
			<hr/> 3,309

Since some parents will send their children to private or parochial school or special schools, and since some children will not complete high school, only about 90 percent of the school-age children will actually attend locally supported public schools. Hence, public school enrollment in Ramapo Mountain is projected at 2,980 (90 percent of 3,309).

- (a) Five-hundred 2 bedroom dwellings expected to be occupied by Ramapo College students are deducted from the unit totals for estimating the number of public school-age children.

The expense of educating these students will be the largest item in Ramapo Mountain's public service budget. Presently, Mahwah spends an average of \$1,275 per pupil each year for public education. However, about \$200 of this is provided through State or Federal aid or is spent on transportation. Since all schools in Ramapo Mountain will be within walking distance of residences, the average locally-raised costs of education, applicable to Ramapo Mountain, excluding transportation, can be set at \$1,075 annually.

The cost of schooling also varies with

the grade level. Secondary education is more costly to provide than primary education. If the \$1,075 average is adjusted to reflect the larger share of primary school students in Ramapo Mountain, compared to the rest of Mahwah's students, the cost per weighted pupil is estimated at \$960 per year. This figure represents the annual local operating expenditure for the average student attending school in Ramapo Mountain.

Operating costs are, of course, only part of the expense of education. The school facilities required by Ramapo Mountain will have to be paid for by amortizing the bonds issued by the School District. Considering the distribution of enrollment by grade level in Ramapo Mountain, it is estimated that it will cost \$190 per student annually to provide school buildings.

Total locally raised educational expenditures for each student living in Ramapo Mountain are calculated to be \$1,150 per year: \$960 for operation and \$190 for debt service on facilities. For the 2,980 students anticipated to live in the new community the total local bill for education will be \$3,425,000 a year.

Local services

Mahwah Township will provide certain local services to the residents of Ramapo Mountain. However, the cost of these services will not be directly proportional to the number of residents. In 1971, \$815,000, or \$75 per resident, was raised in Mahwah from local taxes for municipal services. The largest shares of this budget were allocated to three types of services: police protection, fire fighting and waste disposal. Policing the

25 square miles of Mahwah required 22 percent of the budget alone.

It will cost much less per resident to provide local services to residents of Ramapo Mountain than to the rest of Mahwah Township. For example, solid waste disposal will be handled as part of the community's management, easing the burden on the taxpayer at large. Also, police protection in Ramapo Mountain can be efficiently organized. The compactness of residences and commercial establishments will enable the police to patrol the one square mile of the new community with a reasonable allocation of time and personnel. In addition, since the developer will donate fire and emergency service stations to the township, the cost to the public of these municipal services will be reduced.

Assuming that Ramapo Mountain's local public service costs can be reduced by 40 percent from the 1971 figure of \$75 per capita, it will cost \$842,000 a year to provide such services to its 18,700 residents.

County services and other costs

County government maintains many of the roads in Mahwah and supports certain welfare, social and medical services that are mandated by the State. The county is also responsible for maintaining and developing parks and recreation areas. Presently, each resident of Mahwah pays about \$81 per year for county services. Because of Mahwah's large share of industrial property its share of county tax revenues slightly exceeds the actual cost to the county of providing these services.

Since Ramapo Mountain will provide large amounts of recreation and open space within the community, county expenditures for these services are not expected to be as high as for the rest of Mahwah Township. Also, Ramapo Mountain will maintain its own internal road system. As a result, it is estimated that the new community's county public service costs can be decreased by 15 percent from what they would be otherwise. On this basis, county service costs for Ramapo Mountain are estimated at \$1,295,500 per year.

In addition, the New Jersey system of tax rebates to veterans and senior citizens results in a "cost" to the township of approximately \$4.70 per resident. Assuming an equivalent cost to residents of Ramapo Mountain, the additional cost for these rebates would be \$88,000.

The total annual cost of providing local tax supported public services to residents of Ramapo Mountain when the community is complete is estimated at \$5,650,000.

Estimated annual public service costs of Ramapo Mountain (in 1971 dollars)	
Education	\$3,425,000
Local Services	842,000
County & Other	1,383,000
Total	\$5,650,000

Property tax revenues

When Ramapo Mountain is fully developed, it is estimated that its total taxable value will be \$138.3 million. By applying the 1971-72 equalized tax rate of \$2.53 per \$100 of true value, the property tax revenue produced by the new community is calculated at \$3,500,000 annually. ($\$138,300,000 \times \$2.53 = \$3,500,000$)

Based on recent allocations, 67 percent of this revenue would go for schools, 17 percent to the county, 16

percent to the township and 1 percent for other purposes.

Despite the difference between its public service costs and tax revenues, Ramapo Mountain will have a substantial salutary effect on the local economy and tax situation. Directly and indirectly it will generate increased tax revenue from businesses and residences within the township. Moreover, over the eight-year development period at least part of the payroll and building material expenditures can be expected to spur the local economy, producing increased tax payments. These revenues are difficult to estimate but will certainly run into several hundred thousand dollars each year.

In any community, it usually costs more to provide public services, especially education, to residences with school age children than is returned by these residences in the form of property tax revenues. In Mahwah, this problem is acute because of the relatively high per pupil expenditures on education and the large land area of the community. For example, at the 1971 tax rate of \$2.53 per \$100 of true value, a single-family home with two school-age children would have to be worth over \$85,000 to "pay its own way" for educational and other local services. Clearly, any new residential development that is to be within reach of 99 percent of the population cannot "pay its own way" directly. It is only by virtue of commercial and industrial rateables that communities are able, under the present tax system, to pay for their public services.

Similarly, as a basically residential community, it will cost more to provide locally-supported public service to Ramapo Mountain that it will return in property tax revenue. This gap, estimated at \$2,150,000 annually, is the difference between the \$5,650,000 cost of providing public services and the \$3,500,000 returned in property taxes.

To close this gap Mahwah will have to raise additional revenue by increasing the property tax for the entire township. Should Ramapo Mountain's local public service costs fail to be offset by additional commercial or industrial rateables or new taxes, local property taxes would have to be increased by 25 percent to close the gap. Even with this increase, however, Mahwah's tax rate would still be below the median rate for Bergen County.

A more reasonable basis for calculating the effect of Ramapo Mountain on Mahwah's tax rate would be to assume that the substantial industrial and commercial growth projected for Mahwah will absorb a share of the new community's "revenue gap." Strong market forces are pushing industry and other employers toward suburban locations such as Mahwah. The Regional Plan Association charts these trends and projects a growth of 15,000 jobs in Mahwah over the next decade. One large industrial and residential development on the ridglands is already in the planning stage. It will add an estimated \$100 million to Mahwah's tax rolls over the next decade. The table above illustrates a reasonable projection of the growth in Mahwah's tax base over the next decade.

In this projection, industrial values

are estimated by assuming the complete implementation of the plans for the ridglands as well as an additional \$5 million per year in commercial and industrial development elsewhere in Mahwah. These estimates are consistent with the Regional Plan Association's projections for new jobs in Mahwah over the next decade.

Residential growth is projected by adding the \$120 million value of residences at Ramapo Mountain to the projection of 250 new homes per year at an average price of \$40,000.

When viewed from the perspective of Mahwah's expanding tax base, the revenue gap generated by Ramapo Mountain is much less significant. Even if these new rateables do not yield a net revenue surplus, above their own costs, the growth in the township's total tax base significantly dilutes the effect of Ramapo Mountain's revenue deficit. Under these more realistic assumptions regarding growth in Mahwah, the community will have to raise taxes by 15 percent over the next decade to make up the revenue gap created by Ramapo

Mountain. With orderly growth, Ramapo Mountain's impact on Mahwah's taxes will be limited to 1-1/2 percent a year. ($\$572,000,000 \times \$2.53 = \$14,472,000$; $\$2,150,000 / \$14,472,000 = 14.8\%$)

New Jersey is presently under court order to replace the local property tax system of financing education with a more equitable arrangement. Despite the inability of the New Jersey Legislature and the Governor to agree on the specifics of tax reform, it is likely that in the next few years changes in the property tax system will take place. For example, under the recent proposals of the New Jersey Tax Policy Committee, the local tax rate would be reduced to \$2.44 per \$100 of true value. Following these recommendations, Ramapo Mountain would still pay \$3,098,000 in property taxes, or about 89 percent of what it would return under the existing tax system. However, the takeover by the state of the costs of public education, which now consumes a large share of the local tax dollar, would more than compensate for the revenue lost to the township.

**Estimated tax base of Mahwah, New Jersey:
1983 (in millions of 1971 dollars)**

Class	1971 Equalized Assessments	Projected Growth in Assessments 1972-1983	Total Assessments in 1983
Residential	\$105	\$220	\$325
Commercial	18	30	48
Industrial	60	120	180
Vacant	21	—16	5
Other	6	8	14
	<hr/>	<hr/>	<hr/>
	\$210	\$362	\$572

Environmental impact

Concern for the preservation of the natural environment in Mahwah led Garden Cities Development Corporation to commission an environmental impact study of Ramapo Mountain. After studying the environmental consequences of development, landscape architect Walter Cudnofsky concluded that the site can absorb the new community with little or no negative environmental impact.

Although the land will be altered to some degree, careful planning and construction will enhance the site visually through the introduction of the architecture of the new community. A large portion of the land (30%-40%) will be reserved as permanent open space in its present condition.

The site is not ecologically unique, nor fragile in its large or small-scale environmental attributes. Although the land is irregular, no insurmountable natural conditions will prevent development.

The diagram (at left) illustrates the site's natural conditions. Slope is the primary determinant of environmentally sound development on the site. Area One contains the steepest slopes, and thereby identifies distinct zones as it cuts across the site. To minimize the adverse environmental impact of development on the slopes, this area should absorb only limited development. Since at least two roads must cross this area, which contains beech trees and other vegetation naturally intolerant to intensive development, Area One should be

crossed at its narrow points by both roads and buildings.

Area Two comprises those lands adjacent to the Ramapo River and the level portion of Havemeyer Hollow. This relatively level land cuts across the site irregularly, broken by bodies of water and streams which wind through the flood plain. Conventional structures will be built on the actual flood plain of the Ramapo. Most of Area Two, however, can be built upon with minimal environmental consequences.

Area Two has been environmentally abused in the past. Gravel mining has left the area along the river bed scarred and ugly. Even more disturbing is the traditional use of this land as a garbage dump. Abandoned cars and other trash can be found throughout this area. Development in Area Two will concentrate on upgrading the environment, returning the Ramapo and its flood plain as closely as possible to its original ecological balance.

Area Three is the most naturally varied and complex section of the site. Comprising the northern portion of Havemeyer Hollow, this area has many very steep slopes. These slopes do not present the environmental difficulty of those in Area One, however. The complexity of the relationship between the dendritic drainage system and the high water table near streams require close attention to placement of residential development. Water problems, soil depth problems, and the existence of steep slopes in Area Three will receive the closest attention during the course of detailed planning and development.

The upper portions of Monroe Ridge, including the summit plateau, comprise Area Four—the most easily developable area in terms of environmental considerations. Oak trees, whose roots lie deep

enough to survive significant development, predominate on the gentle slopes of Area Four. Deep soils are contiguous on this relatively large open piece of land. This area will be developed at a relatively high density without adverse consequences. This density, however, will not exceed an average of 10 units per acre.

In order to protect deer and other small animals who presently live on the site, great care will be taken to prevent encroachment on natural areas during construction. Phasing of construction will be arranged so that construction roads and other impermanent features do not cut through open space, disturbing natural life in the area. With cluster development, the wooded and open land that remains in its natural state can support a great deal of wild life. By repairing the flood plain of the Ramapo, wildlife and fish will be attracted where they presently cannot exist.

Although more detailed environmental studies of water quality, subsurface water, geological formations, and soils will be made before actual construction, the basic environmental impact of the development can be controlled so that minimal damage to the environment is done. In fact, the rebuilding of the flood plain and the addition of dramatic architectural styles to the land will enhance the environment of Mahwah.

Transportation impact

In order to assess the impact of Ramapo Mountain upon the transportation system of the surrounding area, Robert Conradt, noted transportation planning consultant, has prepared an analysis of traffic generated by the new community. This report reveals that, when completed, the community will generate a peak-period volume of traffic approaching 4,000 vehicles per hour.

This volume of traffic would have considerable impact on roads in the immediate vicinity of the site. U.S. 202, West Ramapo Avenue, and Darlington Avenue will have to absorb a significant amount of additional traffic. The impact of the additional traffic on other routes in the Mahwah area will be moderate or negligible.

For the first phase of development, existing roads will not be overburdened either by construction traffic or travel by new residents. In succeeding years, however, state, county and local authorities should cooperate to improve several of the connector roads in the area.

First priority on road development should be the widening of Route 202. Two lanes can be added to the route without removing existing trees along the right of way. It is also feasible to widen West Ramapo Avenue without significant disruption. Widening of Darlington Avenue has already been proposed; Ramapo Mountain will strengthen the case for improving this road.

Several alternative road improvement programs could relieve the traffic pressure created by Ramapo Mountain. Construction of the East-West Connector recommended by the existing Mahwah Township Master Plan would

ease traffic congestion throughout the area. The extension of River View Drive and the Extension of Darlington Avenue across Route 202 would also help to eliminate the need to widen U.S. 202 and West Ramapo Avenue. If West Ramapo Avenue were extended across the Ramapo River, the traffic load on Route 202 would be significantly reduced, preserving its essentially rural character.

Efforts will be made to further reduce the traffic flow by encouraging the use of public transportation both within and outside of the new community. Ramapo Mountain's projected population easily justifies the creation of new bus routes to New York and other cities in the region. Special efforts will be made to arrange public transportation to jobs in the region, especially to large employment centers such as the Ford Assembly Plant in Mahwah. The use of public transportation could reduce the peak traffic load by as much as 25%.

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