Lake Linganore: A High Density Town

Geoffrey Andros Beebe

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LAKE LINGANORE - A Thesis Study for a High Density Town in Central Maryland and Design of a Community Recreation Center and Prototype Three Bedroom Townhouses.

Geoffrey Andros Beebe

May, 1969

"In partial fulfillment of the requirements for the degree of Bachelor of Architecture at the University of New Mexico, Albuquerque."
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To: Chairman of Department of Architecture

Mr. Chairman,

The topic for thesis study which I have chosen is a new community development. It is planned for the Washington D.C. area, in particular a few miles outside of Frederick, Maryland, in the rolling farm valley of Frederick County. A large creek passes through the site and a proposed dam and lake are planned, making the site very similar to that of Reston, Virginia.

A projected population of 22,000 is proposed for the 2,200 acre site, an overall density of ten persons per acre. The concept, as put forward by the developers, is to create a community for the high income bracket (10,000 dollars and up). This is to compliment the already well-established low and middle class groups in the town of Frederick. A modification of this concept to include income groups down to, at least lower middle class, would lead to a more diversified community, away from the dormitory direction.

I would like to touch on (1) a preliminary design of a suitable master plan, (2) a more detailed study of a prototype high density housing unit, probably in the nature of a one-to-two story condominium townhouse, and (3) a detailed study and design of the larger public buildings such as a school or civic-recreation center.

The scope of this problem is purposely kept large so that I may develop an architectural feeling for the entire community. The problem is real, dealing with a real site and with real situations. Yet it is open to exploration in many directions. On the surface it is quite extensive for a bachelor thesis. The scope will definitely narrow down as all the data becomes evident; it is for this reason that I wish to keep it large at this time. I feel that I should be able to handle this problem.

As faculty advisors I would like to have Don P. Schlegel and William Weismantel. My outside advisor is Antoine Fredock.

I would greatly appreciate your permission to proceed with this problem. Thank you.

Sincerely,

Geoffrey A. Beebe
29 August 1968

Geoffrey A. Beebe
221 Cornell, S.E.
Albuquerque, New Mexico

Dear Jeff:

Your thesis proposal was reviewed today by Professors Schlegel, Weismantel and Jones, and we wish to inform you that it has been approved.

Your thesis adviser will be Professor Weismantel.

Sincerely,

[Signature]

Don P. Schlegel, Acting Chairman
Department of Architecture
DPS/mk
The problem to be presented involves a new community development in the Washington D. C. area, in particular two and one-half miles east of Frederick, Maryland. The site is 2,200 acres of rolling farm and wood land, with a creek running the greatest length of the site. The community is planned for an ultimate population of 22,000 persons, or an overall density of ten persons per acre.

My proposal for this study is:

(1) to criticize and reconsider the developer's original concept. This will be presented in the program, and is the basis of design and specification considerations.

(2) a preliminary design of a suitable master plan.

(3) an advanced preliminary design of a town center.

(4) design of compatible prototype townhouses.

(5) the design of a Community Recreation Center.
Site: 2,200 acres in Central Maryland, two and one-half miles east of Frederick. Elevation ranges from 270 feet to 692 feet above sea level. Linganore Creek crosses the site and is proposed to be drained, creating a man-made lake up to 35 feet deep and three and one-half miles long, with a total shoreline of nine and one-half miles. This 220-acre lake (10% of the site) would flood only property owned by the Linganore Corporation, and would be contained by an earth-filled dam with a concrete spillway. The water level would be maintained at the 308 foot elevation level, with an emergency spillway planned for the 310 foot elevation level.

Approximately 50% of the site is wooded with virgin timber (some of the older trees exceed 100 feet in height). Practically the entire length of the creek is wooded on both banks. The remainder of the site is typical of the rolling Maryland farmland, most of it not presently being farmed, since the developers purchased the property. The site has several old houses and related farm buildings which date back to the last century. These buildings are to be preserved.

Location: two and one-half miles east of Frederick, Maryland, on Route 40 (a four-lane highway to Baltimore, which is due for upgrading to interstate specifications in the near future). A radius of 60 miles includes Washington D.C. (43 miles),
Baltimore (45 miles), Annapolis (50 miles), Gettysburg, Pennsylvania (30 miles), and easy access to the Pennsylvania Turnpike (a national east-west arterial). The site is located within five miles of a large interstate intersection which branches in four directions (Washington D.C., Baltimore, Cumberland, and Gettysburg).

Friendship International, Dulles International, and National Airports are all within a fifty-mile radius.
William and Louis Brosius of Brosius Homes Corporation are the developers. They began acquiring land four and one-half years ago. The plan for Lake Linganore at Eaglehead was announced late in the summer of 1968. It was at that time the ground had been broken for the privately-owned roads. The project is to be opened for sales during the summer of 1969.
The Brosius Homes Corporation has conceptualized this project as a second home community "for a vacation, retirement, or get-away-from-home" type living situation. The feasibility of such a community is based on the success of several other such communities in the Washington D.C. area.

"Brosius is now opening a lake-orientated, resort lot sale development with many of the recreational features offered at the fast-selling Lake of the Woods in Orange County, Virginia." The emphasis is on "privacy, water, and recreation." The development of the 2,200 acres is simply the division of the property into "some 4,000 lots" for sales purposes. The developer will provide "city-type water and sewer systems for each lot." In addition, there will be underground electrical service and an underground television cable (for the elimination of television antennas). 1,100 acres are to be set aside for the preservation of natural amenities. "An objective is to preserve a rural, natural character on this site where 1,100 acres of open space will be preserved for residents."

"Lots will range from one-third to three acres, with prices at about $4,000 and ranging to $30,000. Architect E. Ray Jones, Chairman of the Department of the School of Architecture at the University of Arkansas, designed the three-building recreation center for an eight acre site." Land planning was done by Harmon, O'Donnell, and Henninger of Denver, Colorado.

The overall development will be a cluster of six villages, each with its own church and village centers for shopping and community gatherings. Shopping on the site will be provided
by "picturesque country stores." The rural atmosphere will be maintained through such details as narrow country roads without curbing (sometimes as narrow as ten feet). The roads have been constructed so that all trees larger than six inches in diameter will be saved.

There will be no building compulsion; however, all buildings must be approved by the Environmental Control Committee. The lake, roads, recreation center, and all other common amenities will be owned and maintained for the exclusive use of members and invited guests by the Lake Linganore Association, Inc., a non-profit organization in which membership is a prerequisite to purchasing property at Lake Linganore. Annual membership charge will be $60.00 per vacant homesite and 0.75% of assessed valuation after the home is built.

Privacy will be maintained by a gatekeeper at each gate. Admission will be restricted to members and invited guests only. This policy will be in effect from the time of the opening. It will be required to display a pass for admission. There will also be a roving security guard.

The project will depend upon already existing facilities for fire protection and education (New Market Volunteer Fire Dept., 1½ miles; New Market Elementary School, 2 miles; Linganore High School, 2 miles. Bus service will be provided by Frederick County School System.). Shopping facilities, although provided on the site with convenient "country stores," will primarily be sponsored by the already existing shopping centers in Frederick.
Other than maintenance crews and the "country stores," there is to be no on-site employment or business districts. The community is designed to "attract the more affluent members of our society, with almost the minimum salary of its inhabitants probably running into the the ten-thousand dollar bracket."
NAME: Lake Linganore.

DEVELOPER: Linganore Corporation, Frederick, Maryland.

CONVEYANCE OF PROPERTY TO PURCHASER: By Warranty Deed.

TITLE INSURANCE: Lawyers Title Insurance Company, to be issued through Frederick Title & Abstract Company, Frederick, Maryland.

LEGAL COUNSEL: Rosenstock & McSherry, Frederick, Maryland. Cross, Shriver, Bright & Washbourne, 610 Mercantile Trust Building, Baltimore, Md.

BANK REFERENCE: Farmers & Mechanics National Bank, Frederick, Maryland.

FINANCING: Up to 5 years upon credit approval.

PROJECT SIZE: Over 2400 acres within Frederick County.

ZONING: Qualified Planned Unit Development under Frederick County Planning & Zoning Commission, meeting all requirements.

ROADS: All weather, hard surface throughout.

UTILITIES: CENTRAL WATER & SEWER SYSTEMS approved by Maryland Health Department. UNDERGROUND ELECTRIC by Potomac Edison Company. TELEPHONE by C & P Telephone Company of Maryland. UNDERGROUND TV CABLE available to each lot.

SCHOOLS: New Market elementary school (1 1/2 mi.) — Linganore High School (2 mi.). Bus service provided.

SHOPPING: Picturesque "Country Store" planned in Linganore. New Market (1 1/2 mi.) is famed for its 21 antique stores in addition to general shopping. Frederick (6 mi.) provides complete shopping facilities.

AIRPORTS: Frederick Airport, 5 minutes away. Friendship, National and Dulles International Airports all within one hour.

PRIVACY: Gatekeeper will restrict admission to members and invited guests at all times.

SECURITY: 24-hour roving security patrols will protect members' property and safety. Fire protection will be provided by the New Market Volunteer Fire Department.

BUILDING RESTRICTIONS: All plans must be approved by Environmental Control Committee.

BUILDING COMPULSION: None.

PRIVATE OWNERSHIP: The lake, roads, Recreation Center and all other common amenities will be owned and maintained for the exclusive use of members and invited guests by the LAKE LINGANORE ASSOCIATION, INC., a non-profit corporation in which membership is a prerequisite to purchasing property at Lake Linganore. Annual Membership Charge — $60.00 per vacant homesite (or 75c per $100.00 assessed valuation after home is built).
COMMON AMENITIES:

PRIVATE LAKE — 220 acres — 3 mile length — 9½ miles shoreline — use of power boats or gasoline motors not permitted.

SAND BEACHES — Strategically spotted around lake shore.

SCENIC PARKS, PICNIC GROVES AND NATURE TRAILS.

BRIDAL TRAILS AND TRAINING RING.

CAMPGROUND (members only — no tents or trailers allowed elsewhere)

RECREATION CENTER — Dining Terrace, Cocktail Lounge, Teen Club, Snack Bar, Game Rooms, Sauna Bath.

REGULATION COURTS — Tennis, Badminton, Volleyball, Basketball.

AAU APPROVED OLYMPIC SIZE POOL — 12 racing lanes.

WADING & SPLASH POOLS — for the "younger set".

THE EAGLEHEAD GOLF AND COUNTRY CLUB: All property owners eligible to apply for membership. Family dues — $7.50 per month (commencing when course is playable). Will provide a championship 18-hole golf course, driving range, pro-shop, club house, swimming pool and tennis courts as well as a complete range of club facilities and activities. Initiation fees waived for applicants prior to January 1, 1969.

CONSULTANTS:

LAND USE PLANNING & MASTER PLAN:
Harmon, O'Donnel & Henninger, Denver, Colorado

ARCHITECTS: RECREATION CENTER
E. Fay Jones, University of Arkansas

GOLF COURSE
William Mitchell, Long Island, New York

MARKET ANALYSIS & APPRAISALS:
Real Estate Research Corporation, Chicago, Illinois
Robert V. McCurdy, Towson, Maryland

MARKETING:
The Lansing Corporation, Naperville, Illinois

ENGINEERING: SANITARY

SURVEY & TOPOGRAPHIC
Hanson & Den Outer, Rockville, Maryland

ROAD & LOT
Rodgers & Associates, Rockville, Maryland

DAM & LAKE
Greenhorne & O'Mara, Riverdale, Maryland

PLANNING & ZONING:
Malcolm Dill, Towson, Maryland

FORESTER:
Gerald Williams, Westminster, Maryland

LINGANORE CORPORATION
Eaglehead, Frederick, Md. 21701
301-865-5551
"Projects such as these are the spirit of the times among builders and people looking for their own houses. Most people today are no longer satisfied with only the house and land it sits on; they are demanding, and getting, the community-orientated developments. They want to be part of a bigger community because they realize that more will be offered to them by the concentration of many people into one place, such as recreation facilities, golf courses, lakes, boating, community centers, etc. and they are not really going to accept less." ¹

This does not sound like a statement in support of the Brosius' proposal for the sale of lots of one-third to three acres in size. But, in fact, it is. Upon superficial exposure, the development appears to be striving for the "new town" concept of a recreation-orientated community. This in fact, is not wholly the case. True enough it is a lake-orientated development, but it is purely an extension of the typical sub-development—a parasite dependent upon the host for its services (education, fire protection, shopping facilities, as well as water, electricity, and sewage). The project becomes a dormitory town. In this case the development is privately owned and is not incorporated into the city limits of either Frederick or New Market.

¹ Lawrence Johnson, Assistant Planner for the Frederick County Planning and Zoning Commission.
The residents, therefore, do not pay any city tax, but do gain the benefits of the host city. The residents pay Homeowners' Association dues which is used for the maintenance of the amenities developed for their use. They of course must pay a state property tax.

Moreover, lots ranging in size from one-third to three acres with an overall density of ten persons per acre, is best described as urban sprawl rather than community concentration. Urban sprawl is not conducive to a feeling of community belonging, but rather the cracker-box implications of typical "American suburbia" and its usual neighbor-next-door relationships.

Brosius emphasizes the quest for rural living ("the good life") on "estate-sized" lots with privacy ("a gatekeeper") and security ("24-hour roving security guards"). Rural living in central Maryland is usually thought of as farms with their associated small communities (500-1,000 pop.). A quick calculation figures the actual density at a minimum of 20 persons per acre on about 2,000 square feet per individual. (This is in consideration of the 1,100 acres of open space and based on an even spread which wouldn't be the case if the lots varied from one-third to three acres in size). This concept certainly isn't rural, but falls more in the direction of suburban.

"The good life" is considered to be that of golfing and water-based recreation, but whether or not these benefits can be enjoyed by oneself is questionable.
The physiological impact of a gate and gatekeeper may be greater than the urge to visit one's friends behind that gate-keep. The effect will probably be that of a military installation. Should the project conform with existing county and city building codes the "security guard" would certainly be replaced with the regular police force. This would in effect relieve the Homeowner's Association of the financial burden of maintaining such a force and allow more creative endeavors to be undertaken.

Brosius thinks that "many of the lots will be taken for second or retirement homes and expects that many of the executives from industries such as Howmet, or the 70-S industries to live at Lake Linganore." The conceptualized development is to accommodate income groups of 10,000 dollars and more. Again this eliminates the possibility of anything but a dormitory community and it then becomes entirely dependent upon outside sources for capital to survive. There is really nothing to hold a population of 22,000. This is poor planning; see Christopher Alexander's article "A City is Not a Tree."

"It has been estimated by professionals in land development that less than half of the lot buyers actually put up that second home within five years after signing a contract. Many of the buyers are content just to have a getaway-site and to enjoy club and recreational facilities to which they are entitled." The Linganore Corporation makes no compulsion for building.
In the final analysis, it appears that the Linganore Corporation is primarily interested in selling lots, 50% of which will never be built. They are not interested in creating a living community as such, and haven't planned in that direction. The energies spent so far on this project have been focused on creating a country club in an urban development...a country club supported by the compulsory dues paid by the suburban lot owners interested in rural living and recreation.

There are many fine points to this project...that it ever got started is one of them. However, the good points of the conceptualized project seem to be overshadowed by a thorough-enough investigation into this relatively new field of new town development. The developer appears more interested in making a quick profit (within five years of the sale of the lot), rather than being honestly involved with the design of a workable new town for better living through tasteful aesthetic and environmental considerations. In so doing, the Linganore Corporation is infringing upon the surrounding communities financially, and jeopardizing what is perhaps one of the most beautiful natural sites in the country.
With the great possibility of a "new town" in this area, and due principally to the close proximity of Washington D.C. and Baltimore, this direction should be explored. This particular site is excellent for this purpose because of: (1.) the close accessibility of the intricate Interstate freeway system, (2.) the rural quality of the site, and (3.) the possibility of a water-orientated town with the large Langanore Creek, which flows through the long axis of the site.

The concept of a functional town has been formulated. This is a "new town"—self-sufficient and not dependent upon existing facilities as a resort might do. It is a development which adds considerably to the county and existing towns in the area. It would have a core or town center which would provide for the everyday functions of life, yet would also be a pleasant and joyous place to live.

With increasing leisure time, recreational facilities and open space become increasingly more important. To maintain large open areas, housing must be condensed to a relatively high figure. The automobile should assume a secondary position within the town structure and still be a useful tool for everyday life. Pedestrian circulation should be such that the car is not a hazard.

The town center should be planned for future expansion and not stifled by construction around it. An ultimate population of 22,000 is to be reached through several phases of
continual construction. The initial phase should concentrate on the saleability of housing units and commercial units, which is probably accomplished by recreational attractions as well as the aesthetic and functional considerations of the community as a whole. The buildings should be sympathetic in material with the site and immediate surroundings. All but high-rise housing should have visual and physical connection or contact with the site. Privacy and the natural setting are to be stressed. This concept assumes that only built housing units will be sold or rented. No plots will be sold without a guaranteed construction date of no more than one year. This is to insure the elimination of vacant lots and the maintenance of the necessary medium-high density population. Homeowners will be required to join the Homeowners' Association and pay an annual dues of $70, which is collected for the maintenance of common open space. Recreation areas (such as the golf course, swimming pools, tennis courts, etc.) will be maintained by membership dues charged to those individuals who use the facilities. In this manner the homeowner is not paying for someone else's recreation, but only his portion of the common open areas. The option of outside membership to those clubs is also open.

The new town should meet already existing construction codes within the area, making the community acceptable for incorporation with an existing town or a legal community within itself.
Lastly, the social restrictions of the developer's concept are to be lowered. The income bracket should be dropped to include income groups as low as six to seven thousand dollars per year, allowing the service personnel who may work at Langhorne to also enjoy its benefits. This is a mandatory reconsideration if the community is to function as a community. The emphasis is not to be placed on low-cost housing, for "you can't move the ghetto into the country and still not have a ghetto." ¹

Further specifics concerning this concept can be found in the section under Basic Issues.

¹ A. Jack Lynn, Public Relations at Gulf Reston.
Frederick County Population

1960 census--------- 71,930
1968 census--------- 85,639
1970 estimated------- 91,600

1900-1960 population increase of 38.5% (51,920 to 71,930).

Frederick (1967)------- 34,924
Thurmont " --------- 11,758
Middletown " ---------10,307
New Market " --------- 9,532
Liberty " --------- 9,492
Myersville " --------- 5,416
Buckeystown " --------- 3,703

In the Washington Metropolitan Area------
50% of population is on 12% of land (cities).
40% of population is on 38% of land (suburbs).
10% of population is on 50% of land (rural).

In 1940, 54% of the Potomac's basin-area inhabitants resided
in the Washington Metropolitan Area; today 66% reside here.

1. THE POTOMAC: The Report of the Potomac Planning Task Force,
   pages 53-54.
An overall annual increase of 4½ per year, more than doubles the national average. This growth will overwhelmingly take place in suburban counties. In the three counties being most rapidly urbanized, 64½ of the land available in 1965 will be developed by 1980. In the metropolitan area as a whole, land is being taken for urban uses at a rate of 24,000 acres per year. This implies that in the next decade 375 square miles more of the nation's Capital's surroundings will be urbanized.
I. CIRCULATION

A. Automobile

1. How much of the site is to be used for public vehicular traffic?
   As little as possible of the total land area shall be used for this purpose, and still maintain a functionable system. No more than seven and one half percent should be devoted for both access (public) and service roads, 160 to 180 acres for this site.

2. Will service vehicles use the same roads?
   Where this is possible the same roads will serve service traffic; however, where this is not possible, service roads should be planned with a balanced economic aesthetic relationship.

3. What is the maximum allowable grade for road surfaces? for parking areas?
   Major access and service access should have grades no greater than 3-10% so the county can take over maintenance. Parking areas should have grades no greater than 7½%. All vehicular surfaces should provide for run-off drainage.

4. Does each dwelling unit have its own garage or parking
area?
With an average of 1½ to 2 cars per family, parking should be provided for this number in addition to visitor vehicles; i.e. at least 1 3/4 cars per unit. Garages and individual parking areas would depend on the architectural limits of the particular dwelling and its site. Group parking areas are permissible in high and mid-density residential areas when they are not in excess of 50 cars per lot. Public areas should provide sufficient parking to meet the demands of that area; however, they should be broken up with planters and trees, preferably already existing trees (in order to preserve the rural atmosphere).

5. What should the maximum distance be from parking to doorstep?
A maximum distance of 75 feet should be maintained between any unit and its parking area.

6. What is the nature of vehicular access to the site?
The site is bounded on the south by Interstate 70E; advantage should be taken of this situation with a high speed interchange along the south boundary. Access should be provided in all other directions where it is
possible to tie into existing Frederick County secondary roads. This is to minimize traffic congestion during rush hour, and eliminate the need for a large main entry.

7. What is the nature of vehicular access within the site? The greatest possible separation between pedestrians and the automobile should be kept. The only interaction should occur where traffic is at a minimum speed. Commercial vehicle access to public areas should be planned for, and all traffic paths should respect the features of the natural landscape.

B. Pedestrian

8. How much of the site is devoted to pedestrian circulation? Other than the walkways and malls, the only pedestrian ways will be paved and unpaved paths of varying widths (determined by actual usage). These paths will follow the open areas and are not necessarily parallel to other traffic patterns.

9. What is the mood of pedestrian circulation? The pedestrian circulation system should encompass all natural moods of the site, as well as be able to handle
all facets of pedestrian travel. It should accommodate a slow quiet stroll, a quick jaunt to the store, a moonlight walk in the woods; it should be functional and aesthetic at all times. The more heavily traveled walks should be lighted and have a relatively smooth surface. The walkways should be drained so they do not retain puddles.

10. Is pedestrian circulation maintained over all realms of the site?
   It should respect the terrain and all properties on the site. See #9 above.

11. Is pedestrian circulation completely divorced from auto traffic?
   Pedestrian and auto traffic should be separated and only related at vital points of contact, such as bus stops. See #7 above.

12. What protection should be provided along these walkways?
   No protection against the natural elements should be provided other than being lighted and having a smooth or uniform surface.

13. Should the walks be orientated on the site to make
advantage of natural features?
Where it is possible features of melting snow by sunlight and natural shade during the summer should be taken advantage of.

14. What is the nature of pedestrian approaches to various buildings?
The pedestrian and vehicular approaches to buildings should be separate where it does not interfere with the function of the building; where this is done the scale should be carefully considered. Where it is not practical to separate the two, the psychological and physical comfort of the pedestrian as well as the functional economy of the auto must be considered.

15. What are the specifications of vertical elements in the pedestrian circulation system?
Stairways should be used where the grade exceeds 33%. Elsewhere the paths can make advantage of ramps. Stairways should be used only as a last resort.

16. What is the maximum time distance relationship along paths for functional usage?
Point-to-point travel time should be a maximum of:
12 to 15 minutes from residence to shopping.
15 to 25 minutes from residence to school.
4 or 5 minutes from offices to parking.
5 to 10 minutes from shopping to parking.
8 to 12 minutes from residence to offices.
10 to 20 minutes from residence to recreation facilities.

The paths should also accommodate long walks of undetermined length, on relatively vacant trails.

17. How is the time-distance relation affected by the seasonal climatic changes?
The Frederick area is subject to extremes in both directions but generally has a mild climate in relation to the surrounding states, and even in relation to immediately adjacent areas in Maryland (Cumberland is cool with severe winters, Washington has hot humid summers). The Frederick area usually gets from 3 to 6 heavy snowstorms a winter, each leaving from 4 to 8 inches of snow. There are frequent light snows, leaving an inch or two of snow on the ground. The temperature during the winter months seldom goes far enough above freezing, so that in areas protected from sunlight it is not uncommon to see snow through mid-April. However, the sun will melt the snow within several days. Heavy snowstorms are accompanied by winds of 25 m.p.h. and more, causing
drifts in unprotected areas. Pedestrianways should be planned to take care of these problems. Children do enjoy the snow but precautions should be taken against ice and deep snow where the walks are used primarily by the older generation. Spring and fall are comparatively mild with periods of long, slow rains, sometimes lasting 2 or 3 days. The temperatures are in the 40's and 50's. The summer months see temperatures in the high 80's during the day and mid 60's at night. The mornings are usually damp and chilly (an east sun orientation would be favorable). On the average of once a week, the summer produces an afternoon or evening thunderstorm, lasting no more than two hours. The wooded areas of the sight would produce a stabilizing effect on the sticky summer weather and would therefore lend themselves well to pedestrian circulation and act as a windscreen during the winter months. The winter climate implies the possibility of two different pedestrian routes, particularly for the older people.

13. What different effects do the various age groups have on the path system?
As pointed out above, the climatic conditions have varying effects on the different age groups. Another element in this consideration is the grade. Again the children
and the younger generation will be better able to cope with the more severe site conditions. The implication here again is to have these conditions more toward the extremes of the site than the town center. A further element is the temporal relationship. The same is true with this element; the longer paths should be kept to the extremes of the site along with the more meandering trails---i.e. a greater and greater intensification as the town center is approached, and vice versa.
II. ENVIRONMENT

19. What are the predominant noises of the site now? At present the site consists of approximately 60% wooded area, the remainder is uncultivated farm land. As such the site produces no sound of its own other than natural wildlife, and the noises common to a stream.

20. What is the character of future noise on this site? The town center and residential areas should be maintained free of the usually high intensity traffic noise levels. Although it will not and probably should not be completely eliminated, but carefully controlled and subdued with appropriate parking and road design (the internal combustion engine emits as much as ten times more noise under load as under idle conditions). Other than traffic noises will be only those produced through everyday living and will be wanted and completely justifiable.

21. What are the noise producers in the immediate surroundings? As mentioned before Interstate 70E borders on the south but does not actually touch the property boundary. This distance is about three hundred yards, and the Interstate road is approximately fifty feet lower in elevation at this point.
Because of this the noise level from the road is quite low. Frederick Municipal Airport is located three miles due west. The airport handles only very small private and commercial aircraft. There are no known plans for future expansion to the airport. The runway is situated east-west so that all flights are either directly toward or away from the Lenganore Development. However, the reasonably far proximity of the airport places the approach turns for flights from the north, west, and south well before the boundaries of the site are met. The distance also protects the site through altitude. This, then, is a source of little noise. The site is entirely surrounded by farms. There are only six roads approaching the site with two of them penetrating it, all are secondary county roads and carry at most about 50 to 60 cars an hour. None of these roads can be considered as major noise producers.

22. What is the overall climatic breakdown? See both charts on following page.
### Temperature

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<td>55</td>
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<td>68</td>
<td>50</td>
<td>94</td>
<td>30</td>
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<tr>
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<td>66</td>
<td>48</td>
<td>103</td>
<td>1</td>
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</tbody>
</table>

### Precipitation and Sunshine

<table>
<thead>
<tr>
<th>Amt. Snow Days</th>
<th>% possib.</th>
<th>noon</th>
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</thead>
<tbody>
<tr>
<td>3.03 4.5 11</td>
<td>48</td>
<td>57</td>
</tr>
<tr>
<td>3.15 T 10</td>
<td>56</td>
<td>46</td>
</tr>
<tr>
<td>4.15 0.0 10</td>
<td>65</td>
<td>53</td>
</tr>
<tr>
<td>3.07 T 7</td>
<td>61</td>
<td>54</td>
</tr>
<tr>
<td>40.78 16.4 114</td>
<td>58</td>
<td>53</td>
</tr>
</tbody>
</table>

Data from U.S. Weather Bureau Report - 1964

Average Annual Precipitation - 30 to 50 inches

Average Precip. Nov. 1 - April 30 : 10 to 20 inches
Average Precip. May 1 - Oct. 31 : 20 to 40 inches

Average Dates of First Killing Frost in Fall : Sept. 30 to Oct. 30
Average Dates of Last Killing Frost in Spring : Mar. 30 to Apr. 30

Percentage of Possible Sunshine Dec. - Feb. : 60 to 40
Percentage of Possible Sunshine June - Aug. : 70 to 50

23. What is the maximum daily precipitation? An evening thunder shower, in 1958, produced 7½ inches of rain.

24. Is the site wooded enough to provide protection from excessive runoff?
   Yes.
25. Is this condition to be maintained?
   Yes, the vegetation should be disturbed as little as possible before, during, and after construction.

26. What sort of vegetation is now stabilized on the site?
   Broadleaf deciduous trees: Maple, Oak, Willow, Ash, Sycamore, Hickory, Apple, Peach, Pear
   Needleleaf evergreen trees: Pine, Hemlock, Juniper, Fir, Spruce
   Undergrowth: Berries (blue and red raspberries, blackberries, blue berries, mulberries), coarse grasses, wild flowers (black-eyed Susan, daisies, morning glories, bluebells, forsythia), and vine type ground-cover (ivy, honeysuckle, poison ivy, clover, wild grapes).

27. What vegetation should be provided for?
   The natural vegetation, with the exception of dense undergrowth and weeds, should be promoted and saved. All cleared areas should be planted in grass, with erosion precautions taken. Otherwise no foreign planting should be brought in, except in the form of private gardens.

28. Will the site allow for private gardens?
   Yes, but only within the bounds of the particular
land holding. Public green spaces will be provided and maintained under the corporation. See section VI on Administration.

29. How much of the site is to be devoted to ground cover by buildings?
The site is planned for about ten persons per acre; three and a half persons per unit*; the units should range from 2100 to 2600 sq. feet for an average four bedroom family dwelling to 900 sq. feet for an efficiency apartment. Actual ground cover should range from 1300 to 200 sq. feet under roof per unit**. This does not account for automobiles; at 1 3/4 per unit at 200 sq. feet per car plus 62.5% for access each unit will require a minimum of 569 sq. feet for automobile circulation (see #4). At 2.85 units per acre with a maximum of 1870 sq. feet per unit ground cover is 5530 sq. feet per acre, or 12.5% at a maximum. Commercial requirements are 16.3 acres per per 12000 persons*, or one acre of commercial for every 21 acres of residential, a land coverage of

*: Figures based on Reston interviews and studies.
**: Figures based on Columbia interviews and studies.
4.77% (this includes commercial parking and is based on a multilevel solution of commercial and professional office requirements. A figure of 1.35 percent should be realized for possible industrial development. A total land coverage of 26% plus or minus 3/4% should be considered for all construction on the site; this is an area of 557 to 642 acres, depending on the final total property size and the total construction size.

30. How should the buildings be site-oriented in relation to climatic conditions?
Design considerations for all buildings should include site-climatic conditions of the actual building site, as well as function, service, etc... A complete breakdown of this will be given in the Reston interview. However, this aspect is in the top priority of the design program.

31. What are the maximum grade conditions for a building site?
There are no such limits. All buildings should take whatever advantage of existing grade conditions as they can, in relation to sitting, views, service, etc...
32. Where are the service easements now located in the area of the site?
No such easements exist either within the site itself or directly adjacent to the site. Telephone and electric service exists along Gas House Pike for farms in the area, with line voltage not exceeding 440. Sewage and water is taken care of ruraly, with wells and septic systems.

33. Are all utilities to be located underground? Is this feasible?
All utilities will be underground. Vertical risers and above ground connection and power stations, for electric and telephone, may exist at one or more points at the boundaries of the site. The architectural implications of these stations should be considered. The power and telephone companies in the have found the high initial expense of underground utilities to be out-weighed by the low service expense through out the years.

34. If the utilities are underground, should vertical access be maintained for their entire length?
No, vertical access should occur in a manner similar to the cleanouts in a sewage system. Telephone and
electrical service can use small connection boxes above ground, as may the gas service.

35. What is the most efficient use or layout of utilities? Underground utilities are usually placed under roads and streets. This placement is most convenient for service reasons (on a double-loaded street), but eventually leads to the destruction of the street when access to the service becomes mandatory. Where density is such that the plan is two-dimensional horizontally, the possibility of utility placement between two buildings exists. While this solution is more efficient in terms of serviceability, service access must be maintained to the easement. This reflects the probability of parallel non-adjacent utilities, with those of lesser serviceability (a space, time, and period relationship) to be placed in the least accessible area; while the others hold a more usual routing. The function and particularly the physical characteristics of each utility point to a non-parallel non-adjacent placement of the utilities (schematically: a grid). Theoretically, each service could be taken full advantage of and ultimate efficiency achieved.
36. What are the mechanical difficulties of the utility system?

The sewage disposal system is dependent on gravity feed and should conform to code specifications of 1 inch per foot. If this cannot be met, a lift station must be employed with no interruptions between the station and lift point. Manhole placement is set by code at 400 feet and at turns of more than 45 degrees at all major intersections. The only major foreseeable problem with the water supply is that of maintaining an even pressure over a large hilly site; this may be done with lift stations to gravity feed storage tanks. The electric services pose no mechanical problems. Gas lines must be carried in vented conduits when under buildings or in slabs; mechanical space must also be provided for these vents. Meter placement must be provided for all services except sewage and phone.

37. How does future expansion affect present sizing of utilities?

Basically, those utilities which are delivered through pipes are the only ones affected by future expansion. The pipe should be sized accordingly and provided
with stubbouts where the projected expansion is to occur. Electrical facilities should provide oversized conduits so that future wires may be pulled through.

38. How much of the site is to be left untouched or unbuilt? Can utility easements use these parts of the site?

From #29 approximately 74% of the site is to be open (uncovered by buildings or streets, but not necessarily pedestrianways and malls). This area may be used for utilities' easements as long as the major vegetation cover is left untouched.
III. SOCIAL

39. What age group should be designed for?

All age groups should be considered, and no exclusions made. See the last three paragraphs of "A City is Not a Tree" by Christopher Alexander, page 61 of FORUM, May 1965.

40. What income group should be designed for?

Presently, the developers are planning for an income group of 10,000 dollars per year and over. It is determined from the Reston study and interviews that this was the basic reason for the financial disaster which Simon encountered. Simon was building for the wrong market: "The young people liked it, but could not afford it. The older people, who could afford it, didn't like it." By nature, new towns are attractive to the young people, who are just getting started in life as are the towns. Their income bracket should be considered as potential buyers. A move in this direction would also open the way to the potential buyer of all ages. The market should be scaled to match the income in the Baltimore-Washington area; this would limit the lower income group as well as the rest to a percentage (perhaps with a sliding scale) which in the end would only be so many units in the $7,000 to $9,000 group and so on.
See the interview with A. Jack Lynn, Director of Public Relations at Reston.

41. What relations exist in a town of comparable size?
Frederick is the only town in the area of comparable size; however, the comparison would be unjust due in part to the history, which dates to the 1750's. The requirements which form a new town are derived from a look in a new direction from that offered by the past. The need for a new town is expressed in the fact that the question was ever brought forward in the first place. The great change in the way of life since the turn of the century, or even the last twenty years, has shown technology to have outgrown the century-old environment from which it sprang; demand for the automobile, new technological advances, even new philosophies of teaching and living, all point the way to a new environment. Therefore, projections into the future must replace the past. But the past is not to be totally discarded; its mistakes offer an improved future. An examination of a new town is vital to the study of the relations which should and do exist in a new town. Reston, Virginia is the prime example, for it did not exist ten years ago and is presently functioning as a town complete within itself. Reston's plan encompasses 7,400 acres
and provides for:

- an eventual population of more than 70,000.
- village centers (7) with shopping, cultural, religious, social, and recreational facilities.
- a Town Center, the heart of Reston’s cultural and commercial facilities, including a medical complex, theaters, and department stores.
- housing: townhouses, detached homes, garden apartments, and lots available for custom-built homes. Apartments and townhouses are within walking distance of shopping, schools, recreation, and community facilities.
- sites for churches, elementary schools, intermediate schools, high schools, and a community college. Two nursery-kindergartens and a day care center are already open for young children.
- Lake Anne (pop. 12,000) Elementary School and The Redeemer Methodist Church are also open.
- recreational areas totaling 1,500 acres: swimming, boating, fishing, golfing, horse-back riding, ice-skating, hiking, camping, volleyball/badminton, tennis, baseball, skiing, and basketball facilities are all presently open.
- a 1,000 acre Industrial Park for research corporations and government installations.
- Reston's residents have formed cultural and civic organizations:
  - The Reston Players
  - The Reston Chorale
  - Reston Community Association
  - Reston Chapter of the Virginia Museum
  - Reston-Herndon Chapter of the League of Women Voters
  - Parent-Teacher's Association
  - Girl Scouts, Boy Scouts, Cub Scouts

- Community facilities already available:
  - Lake Anne Community Hall for plays, films, concerts, etc.
  - Heron House Gallery for art exhibits, lectures, etc.
  - The Rathskeller - a club for teen-agers
  - The Quay Club - a club for adults
  - Carter Glass Library - a branch of the Fairfax County System
  - Ironwood Room - for private gatherings

42. What educational facilities are planned?

The ratio for elementary schools is one school per three-hundred children. With an ultimate population of 22,000 there would be approximately 9,460 dependent children,
of which about 2,420 are under school age. Approximately 2,150 are of high school age (9th-12th grade), which leaves 4,890 for the elementary and intermediate school-age groups; at a straight ratio from grade distribution there would be 1,630 intermediate school-age children and 3,260 elementary school-age children. By the above-stated ratio, there should be 10.85 elementary schools, one intermediate school and two high schools (although one large one is preferable). The possibility exists of combining the intermediate and high schools in one large school; this has been shown to be an effective and efficient approach to education.

43. What is the recreational relation to the various age groups?

All recreational facilities should be planned for the greatest and heaviest usage. The younger people will use the facilities more and will be found in greater percentage, engaged in those activities requiring more strenuous exercise—i.e.: horse-back riding, baseball, basketball, ice-skating, swimming, camping, etc. The older people will be attracted to the other sports offered: golfing, fishing, boating, hiking, tennis, etc.

44. What are the various moods the new town should exhibit?
The new development should capture as much of the site as it is possible. It should radiate a warm rather than a cold and hard atmosphere.

45. What religious facilities should be provided?
As with the educational facilities, the religious facilities will not actually be provided, but the space will be sold to any church for construction purposes.

46. What type of housing is best used in a new town?
It cannot be said that any particular type of housing is best suited to the new town, but more probably an effective combination of all types is necessary for a successful development. One approach in this direction would be that of the density zone. Obviously, all solutions have advantages and disadvantages. The disadvantage to this solution is the impossibility of future expansion in the center or high density area. (See PROGRESSIVE ARCHITECTURE, May 1966, pages 194-201)
If the town center is planned for an ultimate size with no future expansion, then this is not a problem but a correct approach. A more sensitive approach is that of letting the site determine the density and housing type. The disadvantage of this approach is the possibility of extreme disorganization in respect to the
town function.

Townhouses or rowhouses are in wide usage today for several reasons: economically, they save in common foundations and walls as well as eliminating the maintenance of side yards; socially, this type of housing produces vigorous interaction; commercially, the land saving can be accumulated into large useful open areas, thereby preserving the site for recreation and relaxation. Detached homes are appealing to the homeowner and prospective buyer; a small piece of land and its known boundaries represent security and a sense of achievement for the owner and provide him with a certain amount of privacy. Detached homes are a sound investment to the owner in terms of property value; they are, however, difficult to manage in relation to a large-scale development and its upkeep. There are no real ties in a detached home that can be enforced and still hold the interest of a prospective buyer. In addition, these homes are a throwback to the tract development from which the new town is trying to escape; their attraction must nevertheless be respected. Garden apartments are those apartments with one small yard which are generally no more than three stories and not in a tower; they differ from the townhouse only in the respect of the yard which is clearly a part of that particular unit.
The garden apartments provide the owner with a domain of his own, neighbors and social interaction close at hand, his own plot of land to do with as he wishes (usually around 1200 to 1500 sq. ft.), and privacy (though not as great as with the detached home, privacy is a large selling point for this type of housing). High-rise apartments at Reston are used as a focal point, moving the pedestrian into and out of the shopping mall. However, as an apartment tower the high-rise is inefficient, due to the incorrect relation between the number of elevators and the number of units per floor. Apartments in this form are effective for the following reasons:

1) being stacked, each apartment occupies only a fraction of its floor area in relation to units per acre on the site,

2) more units are closer to the town center,

3) beneficial for those persons not wishing to care for a lawn or garden,

4) high-rise apartments are usually rented, thus freeing the occupant of any ownership responsibilities including mechanical maintenance,

5) these units can take advantage of sight-lines which do not exist for units lower to the ground.
Parking is a definite deterrent to this kind of structure (see #4 and #5).

47. What density is to be achieved?

The actual density of any definite area will be determined only by the architecture; this in turn is completely dependent upon the preceding and following questions and answers. The overall population is 22,000 or ten people per acre.

48. Where do the people work?

The developers are looking to Washington and Baltimore for their buyers. The projection is for most of the new town population to bring their income in from the heavy concentration of federal government work in this area. Frederick now has approximately 25% of its working population employed at Fort Detrick, a government-research installation. The future projected growth of the Washington and Baltimore area will fringe on Frederick within the next ten years and have already shown their effects in the vicinity of these two cities. See the excerpts from THE POTOMAC: The Report of the Potomac Planning Task Force.
IV. TECHNOLOGY

49. What is the breakdown of the various materials and construction in this area?

In the housing industry, the usual is platform framed with or without brick veneer. Very seldom are masonry bearing walls used above grade, although this was at one time traditional in this area; the effect and the "colonial look" are still very much sought after. Poured in place concrete is never used in residential work other than in footings; stem walls are laid-up with concrete block. Floor slabs (on basement or grade) are usually put in after the walls and roof are up. Steel framing with block and brick shear and exterior walls is the common method of construction for shopping centers and small offices. These buildings are mostly covered with a bar joist, corrugated metal, and concrete roof and/or roof system. Again formwork for poured in place concrete is kept to a minimum. Buildings of four stories and more employ the latest in building technology—i.e., precast concrete sections which are post-tensioned during the construction process. These buildings are generally of a frame nature with the walls in brick and/or block. An accurate breakdown of various construction expenses is not available; however the above should point out those methods which are relatively most
expensive.

50. What consideration should be given to the materials-site relationship?
All materials should be chosen with this particular relationship in mind, a sensitive and tasteful use of each material being left to the design. There should be no restrictions on materials for the reason that each material has properties entirely different from those of other materials. The feeling or mood of materials should be that of warmth; they should be easy to live with in an everyday situation, and they should amplify the mood of the surrounding site.

51. What mechanical systems should be used?
Provisions for forced air mechanical systems should be made; a room or space large enough for this system and the addition of a cooling system should be provided in each unit as well as sufficient maintenance space. These systems should be as simple and straightforward as architecturally possible.

52. What site conditions should be considered for construction purposes?
The ultimate circulation paths (roads and streets) should
also serve for construction access, and be designed accordingly. Any tree with a trunk diameter exceeding eight inches or any natural growth of outstanding beauty or visual character should be preserved unless it necessary to the project to remove it. Natural rock outcroppings should be preserved or expressed architecturally. Protection against erosion during construction should be provided to as great an extent as possible through on-the-site methods as well as sound planning. Such methods must not hinder the construction process or make it inefficient in relation to landscaping to be done after construction. Note: Exact figures on construction cost were not available; however, various methods of construction can be determined in relation to one another and a scale of greater or lesser relative cost can be evaluated. See #49.
V. FINANCIAL and ADMINISTRATION

53. How can this project be best financed?

The land is under one ownership presently and requires no further financing. There are no banks in Frederick large enough to back a project of this scale, therefore financial assistance must be sought from large companies or corporations. These would probably be insurance or oil companies who stand to make considerable gains on their investment within the next five to ten years. Long-term investors are not interested in projects such as this one, primarily because of the large initial investment and the risk of a relatively new market and one that is unpredictable.

54. What methods of administrative control might be exercised?

With the high percentage of open public land and its maintenance problem, a condominium solution is required. This can be devised on a strict rate per year with the option to change if an unforeseen expense is encountered. A scale of this arrangement can be justified on the grounds that everyone has an equal opportunity to use common facilities and should therefore share an equal part of their expense. A rate should be set that would accommodate additional expenses should they occur; such an expense would be, for example, damage by flood
or hurricane. Another feasible solution is a modification of the above; it simply sets a different rate for each homeowner. This rate is determined as a percentage of the assessed value of the house and any property attached to it. This is justifiable on the grounds that a person with a larger house and family will use the common facilities more than the rest. In addition, this solution will scale the rate to the income of the individual (on the theory that the value of real estate is proportional to the individual income). The percentage rate can be adjusted to maintain a balance between income and expenses of the maintenance and still hold a fair solution for the property owners. This established rate would also take the place of a city tax. Streets, sewage, water, public lighting, etc. would be carried out under this assessment.

55. How are the schools to be operated?

The land for schools is donated to the school system (Frederick County School System), which is then responsible for the construction of all schools as well as the maintenance and care of the schools. Mechanically, the schools may be tied into the public services of the town, or the schools may use the newly engineered system of total energy (energy is chemically generated
from the wastes; the installation cost is extremely high but the operational cost over a period of years greatly outweighs this). The "town," in fact, could use this system and divorce itself from the dependence of existing services and their compromises. Note: For additional information in this field see the section on interviews and research notes.
SITE: 2,200 to 2,400 acres

Automobile- parking and roads (not private driveways)

7½%  160-180 acres.

Pedestrian- malls, walks, and paths  undetermined (see #3 Basic Issues).

Buildings- area under roof only  26% ± 0.75%  557-642 acres.

(see #29 under Basic Issues)

Industrial- total land area includes roads and parking  1.35%

29.75-32.5 acres.

Schools- includes buildings, playgrounds, roads and parking

150.8 acres.

Open Space- pedestrianways, malls, playing fields, lake, etc.

67.5% to 49.3%  1,133-1,463 acres.

(see #29 under Basic Issues)

Lake- includes only water behind dam  10%

220-240 acres.
SCHOOLS: 150.8 acres

Elementary Schools- 3,260 children in grades 1-6. Using a maximum school of 326 students, there are 10 schools @ 125 square feet per pupil; each school will be 39,750 gross square feet.

siteing- 0.0154 to 0.02 acres per student= 7.52 acres per facility.

total gross sq. ft. for elementary schools: 397,500

total gross acreage for elementary schools: 75.2

Junior and Senior High Schools- 3,780 students in grades 7-12.

At 150 sq. ft. per student, there are 567,000 gross sq. ft.

siteing- 0.02 acres per student= 75.60 acres.

total gross sq. ft. for jr.-sr. high schools: 567,000

total gross acreage for jr.-sr. high schools: 75.6

Total School Requirements:

gross acreage: 150.8

gross sq. ft.: 964,500
HOUSING:

Efficiency - approximately 600 square feet.

| Living, dining | 216-220 sq. ft. |
| Kitchen | 40-50 sq. ft. |
| Balcony, patio | 45-50 sq. ft. |
| Sleeping | 105-110 sq. ft. |
| Bath and storage | 120-130 sq. ft. |

**Net sq. footage:** 536-560 sq. ft.

**Gross sq. footage:** 600 sq. ft.

Single Bedroom - Townhouse and Apartment: approx. 850 sq. ft.

| Living | 230-240 sq. ft. |
| Dining | 30-35 sq. ft. |
| Kitchen | 60-70 sq. ft. |
| Bedroom | 160-170 sq. ft. |
| Bath, storage, and entry | 135-170 sq. ft. |
| (balcony) | 50-60 sq. ft. |

**Net sq. footage:** 715-795 sq. ft.

**Gross sq. footage:** 850 sq. ft.

Two Bedroom - Townhouse and Apartment: Approx. 1,100 sq. ft.

| Living, dining | 290-310 sq. ft. |
| Kitchen | 80-85 sq. ft. |
| Bedroom (#1) | 150-160 sq. ft. |
| Bedroom (#2) | 120-130 sq. ft. |
(balcony) 60-65 sq. ft.
bath (2) and storage 150-160 sq. ft.
den 120-130 sq. ft.

net sq. footage: 970-1,040 sq. ft.
gross sq. footage: 1,100 sq. ft.

Three Bedroom- Townhouse: Approx. 1,300 sq. ft.
living, dining 300-320 sq. ft.
厨房 85-90 sq. ft.
bedroom (#1) 150-160 sq. ft.
bedroom (#2) 120-130 sq. ft.
bedroom (#3) 120-130 sq. ft.
bath (2) and storage 160-175 sq. ft.
den 120-130 sq. ft.
(balcony) 80-100 sq. ft.

net sq. footage: 1,125-1,235 sq. ft.
gross sq. footage: 1,300 sq. ft.

Four Bedroom- Townhouse: Approx. 1,550 sq. ft.
living, dining 320-350 sq. ft.
kitchen 90-95 sq. ft.
bedroom (#1) 150-160 sq. ft.
bedroom (#2) 120-130 sq. ft.
bedroom (#3) 120-130 sq. ft.
bedroom (#4) 120-130 sq. ft.
bath (2) and storage 170-185 sq. ft.
den 120-130 sq. ft.
(balcony) 80-100 sq. ft.

net sq. footage: 1,230-1,410 sq. ft.
gross sq. footage: 1,550 sq. ft.

Note: Each dwelling unit must be provided with at least sufficient parking for 1 3/4 cars at 200 square feet each or 350 square feet of parking per each dwelling unit. Ample maneuvering space is required. However, this is dependent upon site conditions and cannot be given a specific space allocation. See I-A under Basic Issues for specifics. Also, all townhouse units must be provided with a minimum yard area of 350 square feet.
COMMUNITY RECREATION CENTER

Administration Wing

<table>
<thead>
<tr>
<th>Area</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Entry, covered</td>
<td>500-520 sq. ft.</td>
</tr>
<tr>
<td>Entry Foyer and Waiting</td>
<td>500-520 sq. ft.</td>
</tr>
<tr>
<td>Administrative Area</td>
<td>800-850 sq. ft.</td>
</tr>
<tr>
<td>Reception</td>
<td>60-75 sq. ft.</td>
</tr>
<tr>
<td>Secy. 3 stations at 70 sq. ft. ea.</td>
<td>210-230 sq. ft.</td>
</tr>
<tr>
<td>Work and Storage</td>
<td>100 sq. ft.</td>
</tr>
<tr>
<td>Manager's Office</td>
<td>150-160 sq. ft.</td>
</tr>
<tr>
<td>Physical Recreation Director's Office</td>
<td>150-160 sq. ft.</td>
</tr>
<tr>
<td>Activities Director's Office</td>
<td>120-130 sq. ft.</td>
</tr>
<tr>
<td>Meeting Room #1</td>
<td>350-400 sq. ft.</td>
</tr>
<tr>
<td>Meeting Room #2 (small rec. room)</td>
<td>500-600 sq. ft.</td>
</tr>
<tr>
<td>Meeting Room #3 (dance and movies)</td>
<td>900-1000 sq. ft.</td>
</tr>
<tr>
<td>Teen Club- Activities Room</td>
<td>900-1000 sq. ft.</td>
</tr>
<tr>
<td>Kitchenette</td>
<td>40-50 sq. ft.</td>
</tr>
<tr>
<td>Receiving and Equip. Storage</td>
<td>330-400 sq. ft.</td>
</tr>
<tr>
<td>Mechanical</td>
<td>250-300 sq. ft.</td>
</tr>
<tr>
<td>Toilets</td>
<td>500-600 sq. ft.</td>
</tr>
</tbody>
</table>

Net Square Footage: **6550-7095 sq. ft.**

Servant Spaces (halls, janitorial clos. etc) 850-900 sq. ft.

Gross Square Footage: Admin. Wing) **7400- 7995 sq. ft.**
COMMUNITY RECREATION CENTER

Pool Area and Locker Rooms

<table>
<thead>
<tr>
<th>Facility</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation Foyer</td>
<td>400-500 sq. ft.</td>
</tr>
<tr>
<td>Checkout and Equipment Storage</td>
<td>250-275 sq. ft.</td>
</tr>
<tr>
<td>Locker Rooms 2 @ 875</td>
<td>1700-1800 sq. ft.</td>
</tr>
<tr>
<td>Weight Room and Equip. Storage</td>
<td>500-540 sq. ft.</td>
</tr>
<tr>
<td>Lifeguard and First Aid</td>
<td>200-230 sq. ft.</td>
</tr>
<tr>
<td>25 Meter Olympic Pool and deck area</td>
<td>7730 sq. ft.</td>
</tr>
<tr>
<td>Pump Room and Equip. Storage</td>
<td>750-775 sq. ft.</td>
</tr>
<tr>
<td>Mechanical</td>
<td>260-280 sq. ft.</td>
</tr>
</tbody>
</table>

Net Square Footage: 11,810-13,130 sq. ft.

Servant Spaces (halls, janitorial clos. etc)  1200 sq. ft.

Gross Sq. Footage Pool & Locker Rms. 13,010-14,330 sq. ft.

20,410-22,325 sq. ft.

provide toilet facilities near office, meeting rooms and recreation areas

provide janitorial closets on each floor, in locker rooms, and near recreational facilities

provide sufficient equipment storage in all areas
COMMUNITY RECREATION CENTER

Site Requirements

<table>
<thead>
<tr>
<th>Building</th>
<th>20,410-22,325 sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diving and Splash Pool</td>
<td>5,900-6,450 sq. ft.</td>
</tr>
<tr>
<td>Deck Area</td>
<td>9,000-9,550 sq. ft.</td>
</tr>
<tr>
<td>Tennis Courts 2 @ 7,200</td>
<td>14,400 sq. ft.</td>
</tr>
<tr>
<td>Parking 100 cars @ 200 sq. ft. ea.</td>
<td>20,000 sq. ft.</td>
</tr>
<tr>
<td>Service Dock &amp; Maneuvering Space</td>
<td>900-1,500 sq. ft.</td>
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Total Square Footage: 70,610-94,225 sq. ft.
<table>
<thead>
<tr>
<th>WEEK</th>
<th>NO.</th>
<th>SCHOOL CALENDAR</th>
<th>HRS/WK. SCHEDULE</th>
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<tr>
<td>June 2</td>
<td>18</td>
<td>Sem. Ends June 4</td>
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</tr>
<tr>
<td>May 26</td>
<td>17</td>
<td>Final Exams May 29</td>
<td></td>
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<tr>
<td>May 19</td>
<td>16</td>
<td>Thesis due Mon.</td>
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</tr>
<tr>
<td>May 19</td>
<td>15</td>
<td></td>
<td></td>
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<tr>
<td>May 12</td>
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<td>May 5</td>
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<tr>
<td>April 28</td>
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<td>April 21</td>
<td>11</td>
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</tr>
<tr>
<td>April 14</td>
<td>10</td>
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<td>April 7</td>
<td>9</td>
<td></td>
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<tr>
<td>March 31</td>
<td>8</td>
<td>End Spring Recess.</td>
<td></td>
</tr>
<tr>
<td>March 24</td>
<td>7</td>
<td>Begin Spring Recess.</td>
<td></td>
</tr>
<tr>
<td>March 17</td>
<td>6</td>
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<td></td>
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<td>March 10</td>
<td>5</td>
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<td>March 3</td>
<td>4</td>
<td>4TH week : Wed.</td>
<td></td>
</tr>
<tr>
<td>Feb. 24</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb. 17</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb. 10</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb. 10</td>
<td></td>
<td>Begin Sem. Thurs.</td>
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</tr>
</tbody>
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Begin Presentation
April 9, Wed.
March 31-April 7
Review and Revise
Finish Bldgs. design by March 29, Sat.

Begin Building Design
Mon. March 3

Finish Site design by Sat. March 1

Begin Thesis with Site design
TIME STUDY

Hours:

Design: 100 hrs.
Presentation: 80 hrs.

100 hrs.  85 hrs.

10 hrs.  5 hrs.
15 hrs.  20 hrs.
10 hrs.  25 hrs.
40 hrs.  40 hrs.

200 hrs.  245 hrs.
55 hrs.  15 hrs.

255 hrs.  260 hrs.

Work:

Site (now & planned phases)
Buildings (hous. & rec.)

Floor plans
Mech. & structural
Sections
Elevations
Site (bldg.)
Perspectives
Photographs
Graphics

Tolerance
Total
During a study of Reston, a personal interview with A. Jack Lynn proved several interesting points and considerations. Those considerations are as follows:

- People are not concerned with aesthetics as such, but what it does to them. They don't recognize good architecture or planning as architecture or planning, or even sculpture. Mr. Lynn cited on-the-street interviews with Reston residents: "I like the water... and shopping in the mall."

- It had been determined that the initial financial failure of Reston was due in part to poor market research; Robert Simon was building for the "wrong market." The concept and design was inherently young in thought. However, the age group to whom Reston appealed could not afford the income group for which it was built. And, of course, the older generation who could afford this type of living, didn't like the concept or architecture; they were not willing to pay $70,000 for a two bedroom townhouse on the lake.

- Financial failure was inevitable for Simon simply because of the lack of a strong enough financial backing for construction purposes. For example, in a ten-unit townhouse construction, he had to sell 60% or six of the ten units before he was able to start construction of any of the units; therefore he could not even promise a delivery date. This situation was further compounded by the nature
of unit groupings. Gulf Reston has the capital to construct the housing units prior to their sale.

- Gulf Reston is building for a more varied income group (to include the seven to eleven thousand dollars per year group). This is to compliment the high income housing group. Simon's original concept was to include all income groups in the same "new town." This is not possible until the development is operating at a profit. At present Reston has secretaries and even a garbage man in residence. Apartments rent for as little as $130 per month (this is highly competitive for the Washington D.C. area).

- Herndon Tower is not financially feasible; the building code in the Washington area requires two elevators for any high-rise apartment building. For this to be financially feasible there should be 4.5 apartments per floor per elevator; Herndon Tower has only 4 apartments.

- The design of Reston, in all phases, is based on a system of priority design factors:

1. Terrain: slope and foundation construction.

2. Climatic effect on that particular site—erosion, drainage, etc.

3. Vegetation and natural ground cover for the natural control of erosion.

4. Mechanical drainage—sewer placement and future service as well as underground electrical and gas service.
5. Vehicular access in relation to the main circulation pattern.

6. Walks and patios, green spaces and pedestrian access.

7. Architecture—its overall massing and architectural aspects of individual units.

8. Balance between architecture, structure, and economy.
Lake Resort Project Set In Frederick

Plans were announced yesterday for one of Maryland's largest lake resort ventures—a 2,400-acre community near New Market in eastern Frederick county.

The "village" concept similar to the one successfully employed at Columbia will dominate the design for "Eaglehead," as the private community will be known. The resort's focal point will be the largest private lake in central Maryland, a 230-acre body of water created by damming Linganore Creek on the northwestern edge of the property.

Eaglehead's concept, says developer J. William Brosius, of Frederick, is aimed at the vacation and weekend audience in Baltimore and Washington. But the resort's planners also hope to attract a significant percentage of primary and retirement home-site owners for year-round living.

Four years of land assembly, involving the purchase of numerous farms and lots in the Catoctin foothills were accomplished. Clearing for basic roads has begun and preparation of the bed of the lake, which will have about 5 miles of shoreline, will begin soon.

Golf Course, Pool

Primary site development, which will cost about $1,000,000, includes lake clearance, the basic road structure and building of the dam, according to Mr. Brosius.

An eighteen-hole golf course off the Baltimore National Pike and a $400,000 recreation center near the central part of the community are planned.

The eight-acre recreation center, designed by E. Fay Jones, chairman of the University of Arkansas School of Architecture, will have an L-shaped swimming pool with 75-yard and 25-meter racing lanes, sun deck, cabanas, bathhouse and locker rooms.

A social building will house offices of the Lake Linganore Association, governing board for the resort, plus lounges, a teen center, game rooms, meeting hall, kitchen, barn and cocktail lounge.

An open-sided pavilion for group functions, six tennis courts and facilities for handball, miniature golf, shuffleboard, basketball, badminton, volleyball, horseshoes and bowling-on-the-green complete recreational features at the Eaglehead club.

Theater Design

The site plan for the Frederick county resort is by Harmon, O'Donnell and Neningter, of Denver, Ca.

It calls for situating resort or year-round homes on lots ranging from three acres to one third of an acre in a "theater" design format. The altitude of some of the Eaglehead homesites approaches 700 feet, while the lake level is planned at about 366 feet above sea level.

Lots are being staked to preserve rock outcropping and natural woods and will be platted to protect all trees larger than six inches in diameter, according to the developers.

Underground wiring, and private sewer and water facilities will be built into the project.

Continued on Page 4

Frederick Lake Resort Project

Continued from Page 1

ect, according to Mr. Brosius who, with L. J. Brosius and James McSherry, a Frederick lawyer, is principal partner in the venture.

The Eaglehead property includes four houses dating from the Eighteenth or early Nineteenth century. These will be preserved, along with a number of stone and frame barns which will be incorporated into the resort design as residences or recreational buildings.

A stone farmhouse of about 1730 has already been restored by the Brosius organization near the proposed recreation center site. Two baths and electric baseboard heat were added to the building, possibly the owner's house of the nearby Boyer's Grist Mill in the Revolutionary era, and a colonial era kitchen, with hand-hewn beamed ceiling and cooking fireplace, preserved.

Six Villages Planned

Six "villages" with a country store and a primary school, will form the framework of Eaglehead's development. Each village center will include a church and developers are setting aside land for middle and upper schools as well.

The Eaglehead community will be about two miles northwest of what is regarded as Maryland's "antique capital," the 21 shops and stores of the village of New Market.

The resort site is off the Baltimore National Pike (Old Route 49) and is bisected by Boyer's Mill road between Gas House pike and the National pike.
Lake Lingenanore Project
To Be Ready Next Summer

BY JEFF VALENTINE
(Staff Writer)

Clearing of land for a Lake Lingenanore development at Eaglehead will begin this month and a 220-acre lake on Lingenanore Creek is expected to be filled by next summer, the developer of the project has announced.

J. William Brosius, president of Brosius Homes of Frederick, and chief developer of the 2,500-acre self-contained community, said that lots will be offered for sale immediately. The proposed community, to be located on Lingenanore Creek between Gas House Pike, Md. 144, Md. 74 and the Lingenanore Road, will include about 4,000 single family lots priced from $895.

The proposed development at Eaglehead gained tentative approval from the County Planning Commission in late July. With zonings accomplished and permits obtained, construction is just getting started and streets are being cut.

The lake, when completed, will be the largest in Central Maryland. Brosius said that the lake will be three and a half miles long with nine and one half miles of shoreline. Depth will range up to 25 feet. Lake Lingenanore will be used exclusively by lot owners for boating, swimming and fishing.

A main attraction at the development will be the large recreation center, consisting of three buildings and covering eight acres of land. Designed by E. Ray Jones, chairman of the College of Architecture at the University of Arkansas, the building will be built of native stone and timber.

The recreation building will include an L-shaped swimming pool, with splash pools, lockers and sauna bathhouse. The social building will have a foyer, lounge, tennis club, meeting-dance hall, bar and offices for the Lake Lingenanore Association.

The Association will own, manage and control the watercourses, roads, parks and projects of the project program," Brosius said. "It's quite a substantial organization and we will provide office space for the organization.

The overall development will be a cluster of six villages, each with its own church and village centers for shopping and community gatherings. Convention facilities will be provided in the third of the main recreation buildings, to be an open-sided but roofed pavilion.

An 18-hole championship golf course meeting exacting standards of golfers is scheduled as a special feature of the project. When membership warrants, a golf clubhouse will be built.

In keeping with an important part of life in the New Market area, emphasis will be placed on horses.Stables, 70 miles of bridle trails, a polo field, and show grounds will be provided.

Brosius emphasized that the entire project will be privately financed. "I think it's important to point out that all of the amenities, the lake, golf course, and such will be privately financed, with no government subsidies at all," he added.

"Of course, the development will be restricted to the private use of the residents. We plan to maintain our own roads plus security guards," Brosius said. "Because the development is so vast, we are going to have to require passes ever during the selling period."

The lots have been laid out to emphasize the woodsly, natural rural character of the area. Stakes for the proposed streets have been moved to spare outstanding trees or unusual rock outcroppings in order to capture and preserve the rural nature.

Also, all wires will be underground and TV antennas will be avoided by having an amplified underground television cable. City-type water and sewer service will be provided for each lot.

Brosius thinks that "many of the lots will be taken for second or retirement homes but I expect many of the executives from industries such as Howmet, or the 70-S Industries to live at Lake Lingenanore."

The area housing contractor says that his project differs from most other similar developments in that 1,100 acres of common open space has been set aside for use of the community and not to be sold off for lots.

(Continued from Page 1)

Lingenanore

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(Continued on Page 5)
Hearing Slated Wednesday

Lake Linganore Development
New Concept In Rural Living

By RUSS EDMONSTON
ASSISTANT WRITER

Lake Linganore at Eagle Head, a planned unit development for 22,000 people, will go before a hearing of the Planning and Zoning Commission today to seek final approval of its general concept and density application.

According to Richard F. Cromble, planning and zoning administrator, the hearing is set for 10 a.m. at Winchester Hall.

The issue involved in this hearing is a new 2,000-acre self-contained community with a projected population of 22,000 people.

According to Lawrence Johnson, assistant planner for the Commission, "this development will be unique on the eastern seaboard."

The conception of the development is oriented toward country living and recreation," he stated.

"It is expected that the development will try to attract the more affluent members of our society," he continued, "with almost the minimum salary of its inhabitants probably running into the $10,000 bracket."

"The development as it has been explained to the Commission, by the developers, will comprise townhouses for those who do not care to be worried about the maintenance of large ground area, such as retirees, and then will branch out into small lots, medium lots and large lots that might ever reach estate size," he added.

"The emphasis of the development will be on the amenities of good living and comfort," he explained while maintaining the flavor of the country and great outdoors.

"If the concept that is being implemented by the developers can be maintained during the building period," he continued, "it will certainly put Frederick County into national attention."

"This project is what is needed in this county," he commented, "it provides a balance and dynamism for us."

"We have low income housing being built, middle income housing developments, and new we have the high income group being attracted to the county by this development," he said.

"Projects such as these are the spirit of the times among builders and people looking for their own homes," he explained.

"Most people today are no longer satisfied with only the house and the land it sits on," "they demand, and are getting, the community oriented developments."

"They want to be part of a bigger community because they realize that more will be offered to them by the concentration of many people into one place,

such as recreation facilities, golf courses, lakes, boating, community centers, etc, and they are not really going to accept less," he emphasized.

"Developers and planners now have the ability to plot out the conception of a community with 22,000 people placed in 2,000 acres because they realize that with good and efficient planning most of the eventualities are taken care of," he said.

"An example of this is for..."
Recreation-Getaway Home Sites Grow

BROSIOUS, from D1

create 9½ miles of shore-
line.
Lots will range from one-
third to 3 acres, with prices
starting at about $4000 and
ranging to $30,000. Architect
E. Fay Jones, chairman of
the School of Architecture
at the University of Arkan-
sas, designed the three-
building recreation center
for an 8-acre site. Land plan-
ning was done by Harmon,
O'Donnell and Henninger of
Denver.

“Our objective is to pre-
serve a rural, natural char-
acter on this site where 1100
acres of open space will be
preserved for residents,”
said William Brosius. He
pointed out that the site in-
cludes a number of old
farms with some stone
houses that will be pre-
served. “City-type water
and a sewer system will be pro-
vided for each lot,” he
added.

This Frederick County
land development, which in-
cludes plans for homes to be
built for lot buyers, is the
newest in a group of recrea-
tion-vacation-retirement lot
development sites in the
mountains, woods, lakes and
around the bay and seashore
in this area.

Besides Lake of the
Woods, now nearly sold out,
there are several other land
developments in the north-
ern part of Virginia. And
there have been a number
in nearby Maryland, includ-
ing the recently rejuvenated
Wicomico Shores along that
river in St. Marys County.

ing a contract. But many of
the buyers are content just
to have a getaway-site and
to enjoy club and recrea-
tional facilities to which
they are entitled. The golf
course is a big attraction at
Wicomico Shores.

To generate serious-
minded buyers for a nearby
recreation-home develop-
ment, the entrepreneurs
often send out broadside in-
vitations to dinner parties at
which on-site inspections are
encouraged by films and
sales pitches. And sales suc-
cess is usually in direct rela-
tion to the aggressiveness of
the selling techniques.

If the number of new de-
velopments and broadcast
advertising are indicative,
there is considerable vitality
in the lot development field
in this area.

But the Linganore Corp.
operation near Frederick is
the first to involve directly
an established Washington
area home building firm.

Brosius will set up an envi-
ronmental design committee
to review plans of every
house or building to be con-
structed at Eaglegate.

With Brosius as the
home-builder pioneer here
in land development for re-
sort community homes,
other area builders will be
watching his progress. If he
is successful, other estab-
lished home buyers may fol-
low his lead in recreation-
oriented land development
for second home sites.

North of the Mason-Dixon
line, the Charnita develop-
ment has offered lots, plus
golf in the summer and a
big ski-lift facility in the
winter. In the Shenandoah
Valley and nearby West Vir-
ginia, large and small land
developments have attracted
many second home site seek-
ers in the past ten years.

Besides the thousands of
families who have bought
lots in developments, there
are hundreds who have
found their own half-acre or
multi-acre spread with some
relationship to wilderness or
water. Summer vacationists
along the Rehoboth-Ocean
City axis have noted an up-
surge of new developments,
most of them related to the
large bay that already had
attracted independent sec-
ond home site seekers.

It has been estimated by
professionals in land de-
velopment that less than half
of the lot buyers actually
put up that second home
within five years after sign-
Recreation Communities Grow; Area Builder at Frederick Site

By John B. Willmann
Washington Post Staff Writer

One of the brightest spots in the currently depressed national housing pattern is the second home market, another indication of rising U.S. affluence.

More and more Americans are buying a piece of land developed in a recreation setting as a site for a vacation, retirement, or getaway home. It has been estimated that 150,000 families will build vacation homes this year.

In order to fulfill the urge or yen to have a vacation home, families must first obtain a lot or a tract of land. Usually, they seek out the wilderness or the water. As a result of the recreation-oriented movement, many land developments have sprung up within commuting distance of major cities.

In this Washington area, which has induced both national and local land developers to set up second home developments in recent years, home builder J. William Brosius is now opening a lake-oriented, resort lot sale development with many of the recreational features offered at the fast-selling Lake of the Woods in Orange County, Va.

Called Lake Linganore at Eaglehead, the 2400-acre Brosius enterprise will have some 4000 lots, many of them on or related to a 220-acre lake to be built on the Linganore Creek in Frederick County. The site is about 2½ miles east of Frederick and north along Route 40 in the New Market area.

Besides the 3½-mile-long lake, Eaglehead will have a pool, clubhouse, tennis, boating, fishing and a golf course to be started next year. "Our emphasis is on privacy, water and recreation," said Brosius, who has been a member of the environmental design study committee of the National Association of Home Builders.

The Lake Linganore Corp. is headed by Brosius and his brother Louis, who spent four years in land assembly, and planning. Construction is now under way after zoning and permits were obtained. Streets are being cut into the site and the lake site will be cleared to permit damming of the creek.

See BROSII, D18, Col. 1
County's Population Expanding Rapidly

By Larry Heslin (Staff Writer)

Much has been predicted about the county's future growth in population, but what has happened in the last few years may be overlooked as people gaze toward the prosperity on the morrow.

Promises of a great Frederick County population in the future are ambitious, but not too much so when you consider what has been going on at present.

At the time of the 1960 census, 71,920 people resided in Frederick County. By 1970, just two years from now and 10 years after the census, an estimated 91,600 people will live here, according to Planning Commission estimates.

Today 83,539 people live in Frederick County.

In the cities in the county too, a lot has been happening. Just eight years ago in Frederick, the largest county municipality, the population was 21,744. In 1967, the population had increased to about 24,598.

The figures in 1987 for Frederick City worked out to 3,186 people living in each square mile of the city.

Actually, the developments over the last 60 years in the county ought to be a basis for understanding of how the predictions of the future large populations are made.

Frederick County has seen an increase in population since 1900 to 1960 of 38.9 per cent, from 51,920 in 1900 to 71,920 in 1960.

Over 60 years the population increased by about 20,000. In just two years it is expected to increase by a like figure in 1970.

Frederick County today is rather balanced as far as urban and rural population.

In the 1960 census, it was found that 32,978 people lived in the cities in Frederick County, for a percentage of 45.9 per cent.

In 1967, however, the cities' populations had grown to 37,283 people, making up 43.5 per cent of the total Frederick County population.

The increase represented in just a seven-year period was 31.1 per cent and there is no reason to expect the increases will be any lower at the next census.

WHERE THE PEOPLE ARE

At present, and probably for a time in the future, most of Frederick County's population lives in the Frederick City region. Estimated population in 1967 in the Frederick region was 34,924 people.

Following this area the Thurmont region was next with 11,738

(Continued on Page 5)
"A City is Not a Tree"

By Christopher Alexander

FORUM: April '65
       May '65
A CITY IS NOT A TREE

BY CHRISTOPHER ALEXANDER

The tree of my title is not a
green tree with leaves. It is
the name for a pattern of thought. The simile is the
name for another, more complex, pattern of thought.

In order to relate these abstract
patterns to the nature of the city, I
must first make a simple distinc-
tion. I want to call those cities
which have arisen more or less
spontaneously over many, many
years natural cities. And I shall
call those cities and parts of cities
which have been deliberately
created by designers and planners
artificial cities. Siena, Liverpool,
Kyoto, Manhattan are examples
of natural cities. Levittown, Chan-
gars, and the British New Towns
are examples of artificial cities.

It is more and more widely
recognized today that there is
some essential ingredient missing
from artificial cities. When com-
pared with ancient cities that
have acquired the patina of life,
our modern attempts to create
cities artificially are, from a human
point of view, entirely unsuc-
cessful.

Architects themselves admit
more and more freely that they
come like living in old buildings
more than in new ones. The non-
arrival of public at large, instead of
being grateful to architects for
what they do, regards the onset
of modern buildings and modern
cities everywhere as an inevitable
adder and piece of the larger fact
that the world is going to the
dogs.

It is much too easy to say that
these opinions represent only people's
unwillingness to forget the
past, and their determination to
be traditional. For myself, I trust
this conservatism. Americans are
unusually willing to move with the
tide. Their growing reluctance
to accept the modern city evidently
expresses a longing for some real
ingothing, which for the moment escapes our grasp.

The prospect that we may be
turning the world into a place
peopled only by little glass and
concrete boxes has alarmed many
architects too. To combat the
box future, many valiant
protests and designs have been
put forward, all hoping to recreate
a modern form of the various
characteristics of the natural city
designed to give it life. But so
far these designs have only
revered the old. They have not been
developed to create the new.

"Ostent," the Architectural Re-

Christopher Alexander, a member of
the faculty of the University of Cali-
ifornia College of Environmental De-
sign, is author of Notes von the Syn-
thesis of Form and co-author with
Serge Chermayeff of Community and
Privacy. He received his bachelor's
degree in architecture and master's
degree in mathematics from Trinity
College; Cambridge, and his doctorate
in architecture from Harvard. He
spent several months in India plan-
ning the development of a small vil-
lage, which he now admits to having
organized as a tree.

The tree and the buildings are ways of thinking about
a large collection of small systems. The art of
natural cities goes to make up large and complex systems. My,
generally, they are both names for structures of

In order to define such structures, let me first define the con-
cept of a set. A set is a collection of elements which for some reas-
on we think of as belonging together. Since, as designers, we are
concerned with the physical living city and its physical backbone, we
must naturally restrict ourselves to considering sets which are col-
lections of material elements such as people, blades of grass, car-
bricks, molecules, houses, wires, water pipes, the water molecule,
that run in, etc.

When the elements of a set be-
long together because they co-
operate or work together some-
how, we call the set of elements

For example, in Berkeley at
the corner of Hearst and Euclid, there
is a drugstore, and outside the
drugstore a traffic light. In the
entrance to the drugstore there is
a newsrack where the day's papers
are displayed. When the light is
red, people who are waiting to
cross the street stand by the
light; and since they have nothing
do, they look at the papers
displayed on the newsrack which
eyou can see from where they
stand. Some of them just read the
titles, others actually buy a
paper while they wait.

This effect makes the newsrack
and the traffic light interdepen-
dent; the newsrack, the newspapers
on it, the money going from peo-
ple's pockets to the dime slot,
the people who stop at the light and
read papers, the traffic light, the
electric impulses which make the
lights change, and the sidewalk
which the people stand on form a
system-they all work together.

From the designer's point of
view, the physically unchanging
part of this system is of special
interest. The newsrack, the traf-
ic light, and the sidewalk between
them, related as they are, form
the fixed part of the system. It
is the unchanging receptacle in
which the changing parts of
the system—people, newspapers,
and electrical impulses—
can work together. I define this
fixed part as a unit of the city. It
derives its coherence as a unit
both from the forces which hold
its own elements together, and
the dynamic coherence of
the larger living system which includes it as a fixed invariant part.

Of the many, many fixed concrete subsets of the city which are the representative of its systems, and can therefore be thought of as significant physical units, we usually single out a few for special consideration. In fact, I claim that whatever picture of the city someone has is defined precisely by the subsets he sees as units.

Now, a collection of subsets which goes to make up such a picture is not merely an amorphous collection. Automatically, merely because relationships are established among the subsets once the subsets are chosen, the collection has a definite structure.

To understand this structure, let us think abstractly for a moment, using numbers as symbols. Instead of talking about the real sets of millions of real particles which occur in the city, let us consider a simpler structure made of just half a dozen elements. Label these elements 1, 2, 3, 4, 5, 6.

Not including the full set [1, 2, 3, 4, 5, 6], the empty set [], and the one element sets [1], [2], [3], [4], [5], [6], there are 36 different subsets we can pick from six elements.

Suppose we now pick out certain of these 36 sets (just as we pick out certain sets and call them units when we form our picture of the city). Let us say, for example, that we pick the following subsets: [123], [341], [45], [234], [314], [1235], [3156].

What are the possible relationships among these sets? Some sets will be entirely part of larger sets, as [34] is part of [314] and [3156]. Some of the sets will overlap, like [123] and [234]. Some of the sets will be disjoint—that is, contain no elements in common, like [123] and [45].

We can see these relationships displayed in two ways. In diagram A, each set chosen to be a unit has a line drawn round it. In diagram B the chosen sets are arranged in order of ascending magnitude, so that whenever one set contains another (as [314] contains [31]), there is a vertical path leading from one to the other. For the sake of clarity and visual economy, it is usual to draw lines only between sets which have no further sets and lines between them; thus the line between [31] and [315], and the line between [314] and [3156], make it unnecessary to draw a line between [31] and [315].

As we see from these two representations, the choice of subsets alone enforces the collection of subsets as a whole with an overall structure. This is the structure which we are concerned with here. When the structure meets certain conditions it is called a semi-lattice. When it meets other more restrictive conditions, it is called a tree.

The semi-lattice axiom goes like this:

A collection of sets forms a semi-lattice if and only if, when two overlapping sets belong to the collection, then the set of elements common to both also belongs to the collection.

The structure illustrated in diagrams A and B is a semi-lattice. It satisfies the axiom since, for instance, [234] and [314] both belong to the collection and their common part, [31], also belongs to it. (As far as the city is concerned, this axiom states merely that wherever two units overlap, the area of overlap is itself a recognizable entity and hence a unit also.)

In the case of the drug store example, one unit consists of the newsrack, sidewalk, and traffic light. Another unit consists of the drug store itself, with its entry and the newsrack. The two units overlap in the newsrack. Clearly this area of overlap is itself a recognizable unit, and so satisfies the axiom above which defines the characteristics of a semi-lattice.

The tree axiom states:

A collection of sets forms a tree if and only if, for any two sets that belong to the collection, either one is wholly contained in the other, or else they are wholly disjoint.

The structure illustrated in diagrams C and D is a tree. Since this axiom excludes the possibility of overlapping sets, there is no way in which the semi-lattice axiom can be violated, so that every tree is a trivially simple semi-lattice.

However, in this paper we are not so much concerned with the fact that a tree happens to be a semi-lattice, but with the difference between trees and those more general semi-lattices which are not trees because they do contain overlapping units. We are concerned with the difference between structures in which no overlap occurs, and those structures in which overlap does occur.

It is not merely the overlap which makes the distinction between the two important. Still
more important is the fact that the semi-lattice is potentially a much more compact and judicious structure than a tree. We may see just how much more complex a semi-lattice can be than a tree in the following facts: a tree based on 20 elements can contain at most 12 further subsets of the 20, while a semi-lattice based on the same 20 elements can contain more than 1,000,000 different subsets.

This enormously greater variety is an index of the great structural complexity a semi-lattice can have when compared with the structural simplicity of a tree. It is this lack of structural complexity, characteristic of trees, which is crippling our conceptions of the city.

To demonstrate, let us look at some modern conceptions of the city, each of which I shall show to be essentially a tree. It will perhaps be useful, while we look at these plans, to have a little ditty in our minds:

Big fleas have little fleas
Upon their back to bite 'em,
Little fleas have lesser fleas,
And so ad infinitum.

This rhyme expresses perfectly and succinctly the structural principle of the tree.

Figure 1. Columbia, Maryland. Community Research and Development Inc.: Neighborhoods, in clusters of five, form “villages.” Transportation joins the villages into a new town. The organization is a tree.

Figure 2. Greenbelt, Maryland. Clarence Stein: This “garden city” has been broken down into superblocks. Each superblock contains schools, parks, and a number of subsidiary groups of houses built around parking lots. The organization is a tree.

Figure 3. Greater London plan 1914. Abercrombie and Pethick: The drawing depicts the structure conceived by Abercrombie for London. It is made of a large number of communities, each sharply separated from all adjacent communities. Abercrombie writes, “The proposal is to emphasize the identity of the existing communities, to increase their degree of segregation, and where necessary to reorganize them as separate and distinct entities.” And again, “The communities themselves consist of a series of sub-units, generally with their own shops and schools, corresponding to neighborhood units.” The city is conceived as a tree with two principal levels. The communities are the larger units.

Figure 4.

Figure 5.
the structure; the smaller subordinate neighborhoods. There are overlapping units. The structure is a tree.

Figure 4. Tokyo plan, Kenzō Tange (left): This is a beautiful plan. The plan consists of a series of loops stretched across the bay. There are four major loops, each of which contains intermediate loops. In the second loop, one medium loop is again subdivided and another is not. Otherwise, each medium loop contains three minor loops and three residential neighborhoods, except in the third major loop where one contains government offices and another industrial area.

Figure 5. Madian City, Paolo Soleri (left): The organic shapes of Madian City lead us, as a number of people believe, to believe that it is a richer structure than our more obviously rigid examples. But when we look at it in detail, we find precisely the same principle of organization as in the city center. Here we find the city divided into a business and a residential quarter, which is itself divided into a number of small areas (actually apartment towers) for 4,000 inhabitants, each subdivided further and surrounded by groups of still smaller dwelling units.

Figure 6. Chandigarh (1951) by Le Corbusier (top right): The city is served by a central node in the middle, and to the administrative center at the head. Two subsidiary elongated, commercial cores are along the major arterial roads, one north-south. Subsidiary to these are further administrative, commercial, and residential centers for each of the city's 20 wards.

Figure 7. Brasilia, Lúcio Costa: The entire form pivots about the city axis, and each of the two ends is served by its own main train station. This main axis is in turn served by subsidiary arteries parallel to it. Finally, these are fed by the streets which surround the superblocks themselves. The structure is circular.

Figure 8. Communities, Perreault and Goodman: Communities are similarly organized as a tree: the first is divided into four concentric zones, the innermost being a central core, the next a nucleus, the third residential, and the fourth open country. Each of these is further subdivided so that the commercial center is represented as a great cylindrical office building, containing five layers: airport, administration, light manufacturing, shopping and amusement; and, at the bottom, roads, bus and mechanical services. The university is divided into eight sectors comprising natural history, zoos and aquariums, planetarium, science laboratories, plastic arts, music, and drama. The third concentric ring is divided into neighborhoods of 4,000 people each, not
consisting of individual houses, but of apartment blocks, each of these containing further individual dwelling units. Finally, the open country is divided into three segments: forest preserves, agriculture, and vacation-lands. The over-all organization is a tree.

Figure 9. The most beautiful example of all I have kept until last, because it symbolizes the problem perfectly. It appears in Hilbert's book called The Nature of Cities. He describes the fact that certain Roman towns had their origin as military camps, and then shows a picture of a modern military encampment as a kind of archetypal form for the city. It is not possible to have a structure which is a clearer tree.

The symbol is apt, for, of course, the organization of the army was created precisely in order to create discipline and rigidity. When a city is endowed with a tree structure, this is what happens to the city and its people. The lower photo, is Hilbert's own scheme for the commercial area of a city based on the army camp archetype.

Each of these structures, then, is a tree. Each unit in each tree that I have described, moreover, is the fixed, unchanging residue of some system in the living city itself (just as a house is the residue of the interactions between the members of a family, their emotions, and their belongings; and a freeway is the residue of movement and commercial exchange).

However, in every city there are thousands, even millions, of times as many more systems at work whose physical residue does not appear as a unit in these tree structures. In the worst cases, the units which do appear fail to correspond to any living reality; and the real systems, whose existence actually makes the city live, have been provided with no physical receptacle.

Neither the Columbia plan nor the Stein plan, for example, corresponds to social realities. The physical layout of the plans, and the way they function, suggests a hierarchy of stronger and stronger closed social groups, ranging from the whole city down to the family, each formed by associational ties of different strength.

In a traditional society, if we ask a man to name his best friends and then ask each of these in turn to name their best friends, they will all name different people, very likely unknown to the first person; these people would again name others, and so on outwards. There are virtually no closed groups of people in modern society. The reality of today's social structure is thick with overlap—the systems of friends and acquaintances form a semi-lattice, not a tree (Figure 10).

But today's social structure is utterly different. If we ask a man to name his friends and then ask them in turn to name their friends, they will all name different people, very likely unknown to the first person; these people would again name others, and so on outwards. There are virtually no closed groups of people in modern society. The reality of today's social structure is thick with overlap—the systems of friends and acquaintances form a semi-lattice, not a tree (Figure 10).

In the natural city, even the house on a long street (not in some little cluster) is a more accurate acknowledgment of the fact that your friends live not next door, but far away, and can only be reached by bus or automobile. In this respect Manhattan has more overlap in it than Greenbelt. And though one can argue that in Greenbelt too, friends are only minutes away by car, one must then ask: Since certain groups have been emphasized by the physical units of the physical structure, why are just these the most irrelevant ones?

In the second part of this paper, I shall further demonstrate why the living city cannot be properly contained in a receptacle which is a tree—that indeed, its very life stems from the fact that it is not a tree.

Finally, I shall try to show that it is the process of thought itself which works in a tree-like way, so that whenever a city is "thought out" instead of "grown," it is bound to get a tree-like structure.

(The balance of Mr. Alexander's article will appear in May, Ed.)
In the first part of this article, we saw that the units of which an artificial city is made up are organized to form a tree. So that we get a really clear understanding of what this means, and shall better see its implications, let us define a tree once again:

Whenever we have a tree structure, it means that within this structure no piece of any unit is ever connected to other units, except through the medium of that unit as a whole.

The enormity of this restriction is difficult to grasp. It is a little as though the members of a family were not free to make friends outside the family, except when the family as a whole made a friendship.

In simplicity of structure the tree is comparable to the compulsive desire for neatness and order that insists the candles lie on a tablecloth perfectly straight and perfectly symmetrical about the center. The semi-lattice, by comparison, is the structure of a complex fabric; it is the structure of living things; of great paintings and symphonies.

It must be emphasized, lest the elderly mind shrink in horror from anything that is not clearly articulated and categorized in tree a manner, that the idea of overlap, ambiguity, multiplicity of aspect, and semi-lattice, are not less orderly than the rigid tree, but more so. They represent a thicker, tougher, more subtle and more complex view of structure.

Let us now look at the ways in which the natural, when uncombined by artificial conceptions, has itself to be a semi-lattice.

A major aspect of the city's social structure which a tree can never mirror properly is illustrated by Ruth Glass's redevelopment in Middlesbrough, a city of 100,000 which she recommends be taken down into 29 separate neighborhoods. After picking her 29 neighborhoods by determining here the sharpest discontinuities in building type, income, and jobs as occur, she asks herself the question: "If we examine some of these systems which actually exist for the people in such a neighborhood, do the physical systems defined by these various social systems all define the same "if neighborhood?" Her own answer to this question is no.

Each of the social systems sees a social system. It is a bit of some sort of central node, of the people who use this center. Specifically she takes elementary schools, secondary schools, youth clubs, adult clubs, post offices, grocers, co-ops, and grocers selling sugar. Each of these centers draws its users from a certain spatial area or spatial unit. This spatial unit is the physical residue of the social system as a whole, and is therefore a unit in the terms of this paper. The units corresponding to different kinds of centers for the single neighborhood of Waterloo Road are shown in Figure 1.

The hard outline is the boundary of the so-called neighborhood itself. The white circle stands for the youth club, and the small solid rings stand for areas where its members live. The ringed spot is the adult club, and the homes of its members form the unit marked by dashed boundaries. The white square is the post office and the dotted line marks the unit which contains its users. The secondary school is marked by the spot with a white triangle in it. Together with its pupils, it forms the system marked by the dot-dashed line.

As you can see at once, the different units do not coincide. Yet neither are they disjoint. They overlap.

We cannot get an adequate picture of what Middlesbrough is, or what it ought to be, in terms of 29 large and conveniently integral chunks called neighborhoods. When we describe the city in terms of neighborhoods, we implicitly assume that the smaller elements within any one of these neighborhoods belong together so tightly that they only interact with elements in other neighborhoods through the medium of the neighborhood to which they themselves belong. Ruth Glass herself shows clearly that this is not the case.

Below are two pictures of the Waterloo neighborhood. For the sake of argument I have broken it into a number of small areas. Figure 2 shows how these pieces stick together in fact, and Figure 3 shows how the redevelopment plan pretend they stick together.

There is nothing in the nature of the various centers which says that their catchment areas should be the same. Their natures are different. Therefore the units they define are different. The natural city of Middlesbrough was faithful to the semi-lattice structure they have. Only in the artificial tree conception of the city are their natural, proper, and necessary overlaps destroyed.

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Take the separation of pedestrians from moving vehicles, a live concept proposed by Le Corbusier, Louis Kahn, and many others. At a very crude level of thought this is obviously a good idea. It is dangerous to have children on certain roads in contact with motor traffic. But it is not always a good idea. There are times when the ecology of a situation actually demands the opposite. Imagine yourself coming out of a Fifth Avenue store; you have been shopping all afternoon; your arms are full of parcels; you need a drink; your wife is limping. Thank God for taxis.

Yet the urban taxi can function only because pedestrians and vehicles are not strictly separated. The prowling taxi needs a fast stream of traffic so that it can cover a large area to be sure of finding a passenger. The pedestrian needs to be able to hail the taxi from any point in the pedestrian world, and to be able to get out to any part of the pedestrian world which he wants to go. The system which the taxi needs to overlap both the fast vehicular traffic system and the system of pedestrian circulation. In Manhattan pedestrians and vehicles do share certain parts of the street, and the necessary overlap is guaranteed (Figure 4).

Another favorite concept of the urban theorists is the question of recreation from everything else. This has crystallized in our real cities in the form of playgrounds. The playground, isolated and fenced in, is nothing but a pictorial acknowledgment of the fact that "play" exists as an isolated concept in our lives. It has nothing to do with the life of play itself. Few self-respecting children will ever play in a playground. Play itself, the play that children notice, goes on somewhere different everyday. One day it may be in the pool, another day in a friend's yard, another day down the river, another day in the park himself, another day on a recreation site which has been planned for the weekend. Each of these play activities, and the objects it requires, forms a system. It is not true that these systems exist in isolation, cut off from the other systems in the city. The different systems overlap one another, and they overlap many other systems besides. The units, the physical places recognized as play places, must do the same.

In a natural city this is what happens. Play takes place in a thousand places—it fills the interstices of adult life. As they play, children become full of their surroundings. How can a child become filled with his surroundings in a fenced enclosure? He cannot.

The isolated campus
A similar kind of mistake occurs in trees like that of Goodman's Communitas, or Soleri's Mesa City, which separate the university from the rest of the city. Again, this has actually been realized in common American form of the isolated campus.

What is the reason for drawing a line in the city so that everything within the boundary is university, and everything outside is non-university? It is conceptually clear. But does it correspond to the realities of university life. Certainly it is not the structure which occurs in non-artificial university cities. Take Cambridge University, for instance. At certain points Trinity Street is physically almost indistinguishable from Trinity College. One pedestrian crossing in the street is literally part of the college. The buildings on the street, though they contain stores and coffee shops and banks at ground level, contain undergraduates' rooms in their upper stories. In many cases the actual fabric of the street buildings melts into the fabric of the old college buildings so that one cannot be altered without the other.

There will always be many systems of activity where university life and city life overlap: pub-crawling, coffee-drinking, the movies, walking from place to place. In some cases whole departments may be actively involved in the life of the city's inhabitants (the hospital-nursing school is an example). In Cambridge, a natural city where university and city have grown together gradually, the physical units overlap because they are the physical residues of city systems and university systems which overlap (Figure 5).

Let us look next at the hierarchy of urban cores, realized in Benazil, Chandigarh, the MARS plan for London, and, most recently, in the Manhattan Lincoln Center, where various performing arts serving the population of greater New York have been gathered together to form just one core.

Does a concert hall ask to be next to an Opera House? Can the two feed on one another? Will anybody ever visit them both, glutonomously, in a single evening, or even buy tickets from one after going to a concert in the other? In Vienna, London, Paris, each of the performing arts has found its own place, because all are not mixed randomly. Each has created its own familiar section of the city. In Manhattan itself, Carnegie Hall and the Metropolitan Opera House were not built side by side. Each found its own place, and now creates its own atmosphere. The influence of each overlaps the part of the city which has been made unique to it.

The only reason that these functions have all been brought together in the Lincoln Center is that the concept of performing art links them to one another.

But this tree, and the idea of a single hierarchy of urban cores which is its parent, do not illuminate the relations between art and city life. They are merely born of the mania every simple-minded person has for putting things with the same name into the same basket.

The total separation of work from housing, started by Tony Garnier in his industrial city, then incorporated in the 1939 Athens Charter, is now found in every artificial city and accepted everywhere where zoning is enforced. Is this a sound principle? It is easy to see how bad conditions at the beginning of the century prompted planners to try to get the dirty factories out of residential areas. But the separation misses a variety of systems which require, for their sustenance, little parts of both.

Jane Jacobs describes the growth of backyard industries in Brooklyn. A man who wants to start a small business needs space, which he is very likely to have in his own backyard. He also needs to establish connections with larger going enterprises and with their customers. This means that the system of backyard industry needs to belong both to the residential zone, and to the industrial zone. These zones need to overlap.

In Brooklyn they do (Figure 6). In a city which is a tree, they can't.
The most startling proof people tend to conceive even as far as trees are concerned is from some experiments of Sir Fred Bartlett. He showed people a form for about 15 seconds and asked them to draw what they had seen. Many people, unable to grasp the full complexity of pattern they had seen, simplified the patterns by cutting out overlap. In Figure 2, the original is shown at the top, followed by a fairly typical redrawn version below it. In the redrawn version, the circles are separated from the rest; the overlap between triangles and circles disappears.

The experiments suggest that people have an underlying tendency, when faced with a complex organization, to simplify it mentally in terms of non-overlapping units. The complexity of the semi-lattice is simplified by the simpler and intuitively graspable tree form.

You are not alone in wondering, for now, what a city looks like while you are in a semi-lattice, but not a tree. You must confess that I cannot yet show you plans or sketches. It is not enough merely to make a demonstration of overlap—the overlap must be the right one. This is doubly important, because it is so tempting to make plans which overlap occurs for its own sake. This is essentially what is usually termed the "life-sized" city plan of recent years do. But overlap alone does not give structure. It can also give chaos. A garbage can is full of overlap. To have structure, you must have the right overlap, and this is for us almost certainly different from the overlap which we observe in historic cities. As the relationship between functions changes, so the systems which need to overlap (or order to receive these relations) must also change. The recreations of old kinds of overlap will be inappropriate, and chaotic instead of structured.

The work of trying to understand
and just what overlap the modern city requires, and trying to get this required overlap into optical and plastic terms, is still going on. Until the work is complete, there is no point in presenting these sketches of ill thought structure.

**Overlapping triangles**

However, I can perhaps make a physical consequence of overlapping more comprehensible by means of an image. The painting illustrated is a recent work by Simon Balten (Figure 9). The fascination of this painting lies in the fact that although constructed of the few simple triangular elements, these elements unite in many different ways to form the eye units of the painting—indicated by the way the triangle enters into or joins two different eyes of the painting, the eye unit, none contained in others, yet all overlapping in the triangle.

Thus, if we number the triangles and pick out the sets of triangles which appear as strong visual units, we get the semi-lattice as in Figure 10. Tree and 5 form a unit because they work together as a rectangle; 1 and 4 because they form a parallelogram; 3 and 6 because they both dark and pointing the way; 6 and 7 because one is part of the other shifted side; 4 and 7 because they are retained with one another; 4 and 5 because they form another angle; 4 and 5 because they form a sort of Z; 2 and 3 because they form a rather thinner kind; 1 and 7 because they are opposite corners; 1 and 2 because they are a rectangle; 3 and 5 because they point the same way; 1 and 6, and form a sort of water reflection; 3 and 6 because they enclose 4 and 5; 1 and 7 because they enclose 3, 2, and 4.

We have only listed the units of two angles. The larger units are more complex. The white is a complex still, and is not included in the diagram below: it is harder to be sure of its optical pieces.

A painting is significant, not only because it has overlap in any paintings have overlap, but rather because this has nothing else in it except overlap. It is only the fact of overlap, and the resulting plurality of aspects which are present, that makes the painting fascinating. It seems almost as though the painter had made an explicit attempt, as I have done, to single out overlap as a vital generator of structure.

All the artificial cities I have described have the structure of a tree rather than the semi-lattice structure of the Nichol-on painting. Yet it is the painting, and other images like it, which must be our vehicles for thought. And when we wish to be precise, the semi-lattice, being part of a large branch of modern mathematics, is a powerful way of exploring the structure of these images. It is the semi-lattice we must look for, not the tree.

When we think in terms of trees, we are thinking the humanity and richness of the living city for a conceptual simplicity which benefits only designers, planners, administrators and developers. Every time a piece of a city is torn out, and a tree made to replace the semi-lattice that was there before, the city takes a further step toward dissociation.

In any organized object, extreme compartmentalization and the dissociation of internal elements are the first signs of coming destruction. In a society, dissociation is amoral. In a person, dissociation is the mark of schizophrenia and impending suicide. An ominous example of city-wide dissociation is the separation of retired people from the rest of urban life, caused by the growth of desert cities for the old like Sun City, Arizona. This separation is only possible under the influence of tree-like thought.

It not only takes from the young the company of those who have lived long, but worse, it causes the same rift inside each individual life. As you will pass into Sun City, and into old age, your ties with your own past will be unacknowledged, lost, and therefore broken. Your youth will no longer be alive in your old age—the two will be dissociated, your own life will be cut in two.

For the human mind, the tree is the richest vehicle for complex thoughts. But the city is not, cannot, and must not be a tree. The city is a receptacle for life. If the receptacle severs the overlap of the strands of life within it, because it is a tree, it will be like a bowl full of razor blades on edge, ready to cut up whatever is entrusted to it. In such a receptacle life will be cut to pieces. If we make cities which are trees, they will cut our life within to pieces.
"Lake Anne Village Center—Planned Community Nucleus"
resolutions unpredictably sprout their own imperfections. Everyone by now is familiar with Reston's solid architectural achievements: its good taste, the submersion of crude commercialism, its cluster housing, the integration of shops and apartments, the ban on automobiles and the reinstatement of legs as the means of locomotion, the focus on the outdoor recreational life, etc. It may just be time to take a few pokes at the pudding, to play Lucifer and question the validity, desirability, and consequences of the heavenly life.

The Reston Village Center does raise innumerable questions: What's the nature of a village? Can you plan it? Or does it grow? Can a developer dictate a way of life and public taste? The dilemma of the center is that it smacks of the unreal; it is like a stage set drawn within the imaginative scope of one man—it is immutably, and somewhat dead. There are several reasons for the Reston predicament: they concern scale, focus, homogeneity, and overplanning.

The first completed village center at Reston, by Whittlesey, Conklin & Rossant, raises several questions as to planning a small town center and giving life and credibility to the controlled architectural environment.

The first village center of Reston, Virginia—Lake Anne—opened last December to folk dancers leaping, English handbell ringers ringing, puppets pupping, choirs singing, and a final assemblage climaxing the event with an "antiphonal concert of suitable music." Reston as a whole has been praised so briskly in both the architectural and lay press that its virtues are only too well known. One resident actually thinks that all the Te Deums have done Reston more harm than good: Potential buyers may be scared to death of living in paradise, and advertisements with obscure quotes from Latin philosophers, vouching for the good life, may be putting on a bit of the old dog. Like any Utopia solidified in concrete, Reston resolves an entire set of problems but at the same time the
Living on Lilliputian Scale

A serious reason for the incredibility of the Village Center is the strange sense of scale. The complex seems like a toy in which the characters play at the game of life. Robert Simon, the developer, did set out to make a sport of living. Each village was to focus on an activity, a recreational diversion. Village I is supposed to center around a lake and water sports: Village II will be designed for the horsey set, and so on. The strategy is based on the assumption that play rather than work is the catalyst for social groupings. In this new world, writers will not congregate in one spot and professionals in another; conversations will not revolve around molars, novels, or navels, but groups will cluster together on the basis of golf, conversations will revolve around points and scores, and tensions will arise when jod-purled junior gets his first glimpse of the bikini-briefed swimming girl who lives over the hill in Watertown. It seems like a logical solution for a society galloping towards a four-day work week, early retirement, and plenty of leisure time. But it also demands that the sport in question be absorbing, and have enough scope to occupy body and soul for eighty-odd active years.

Now this is just what the first Reston center does not provide. It is a make-believe sailing village pitched on the edge of a bathtub. It is trying to make an ocean out of a frog pond and verges on the pretentious, mocking the inhabitant who is founding a way of life on sailing to the supermarket to fetch a six-pack. The comedy has its root in the disparity between the grandeur of the dream and the misery of the facts. The lake is small. The architects had to play up a motif when there was not much to play with. They made a massive pier of Renaissance proportions and devised a curving baroque complex worthy of Venetian canals. In recognition of the disparity between the ideas and the space, the architects—perhaps deliberately—broke down the scale of the buildings, broke up the façades with multiple facets. But the illusion is destroyed on two accounts: A brief look down the waterway to the lake brings to view the Chlothiel Smith town houses that sit on the opposite shores with all the exaggerated clumsiness of fat ladies in bold printed dresses. Their huge, oversized...
windows create an odd picture of elephantiasis, and as a whole they make the Village Center buildings that are closer at hand look smaller. The second disturbing note is that the individual units within the grand scheme are in fact quite small. There is the curious feeling that one is walking onto a stage set of accentuated and false perspectives. The apartments above the shops are quite pretentious in their layout, with a central staircase suspended in a two-story space. The size of the room, however, does not warrant the grandeur of the gesture, and again the effect is that of an impressive, prestigious motif borrowed from the castle to adorn the modern upper-middle-class broom closet.

The small scale of the apartments and their self-conscious and immediate relationship to the piazza gives the decided impression that they are playing the part of the cute little-apartment-above-the-square. The architects have not achieved that peculiar balance between private and common spaces so characteristic of Parisian squares such as Place des Vosges.

The dichotomy of scale is carried around to the rear of the building. Although the architects have quite sensitively placed a small raised garden between the parking lot and the entry door (effectively blocking the onerous automobile), the entire sweep of the complex is muddled by a hodgepodge of buildings in front. The shape of the building is tantalizing—one would like to see more of it, but the expectation is never fulfilled.

On the practical, nonaesthetic side of the picture there is the problem that, in some areas, the Village Center is already too small and has no place to go. The Community Center auditorium is already bulging with activities, and since the teen-age group has taken over the “Rathskeller,” the slightly younger set wants a hang-out of its own. There are more professionals who want offices there than there are spaces, and apartments are being converted to commercial or business use. Since the pedestrian plaza is the controlling nucleus of the complex, it appears it is already bursting at the seams and growth will have to take place outside of the plaza area. The architects have already made use of the space above the supermarket for the kindergarten playground but the rooftops of other buildings were not programmed
for expansion. The dilemma only points up the fact that it is almost impossible to predict the use and growth of a complex. Rather than setting up a rather rigid architectural framework, it would seem more realistic to provide an expandable system, one that could be shaped and modified by growing needs while at the same time preserving the central focal point of the pedestrian square. But that requires a more complex, four-dimensional concept of planning.

**Good Taste and the Good Life**

One resident at Reston made the comment that the tone set for the center by the architects was admirable: "I feel as if they thought of me first as a person, not as a potential dollar spender." The commercialism of the center has indeed been subdued. Storefronts and signs have been designed by the architects with tasteful whimsey. Products or by-products of the store have been used to announce their wares and services. A large band-aid and toothbrush marks the drugstore, mobiles of hangers advertise the cleaners, and a series of mirrors identify the beauty parlor. The art store was allowed to do pretty much what it wanted, on the assumption that the owner would naturally have good taste. The result is subdued; it is tasteful, playful, yet it nevertheless contributes to the oppressive feeling of control, of planning. There is very little room for accident, for individual expression.

Both in plan and in façade, Reston raises the perplexing question: Is too much planning self-defeating? The very character of a village is, after all, defined by its activity, its diversity, its accidents. The planners and architects have taken this into account in the step-by-step development of the town center: it seems inconsistent that the same principles are not applied in the first village center.

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*Reston Village abounds in play sculpture, and recreation: Reston’s fountains (1) and pyramid (2) are clearly items to be loved with, not just looked at. Lookout (3) is for boat racing referees; frozen lake (4) for skating. Gonzalo Fonsera, a sculptor, worked on premises during construction; his sun month (facing page) lies below high-rise tower.*
"Planning For The Everyday Life and Problems of Suburban and New Town Residents."

From People and Plans - Essays on Urban Problems and Solutions pgs. 133-201
Planning for the Everyday Life and Problems of Suburban and New Town Residents

This paper attempts to describe and predict the everyday life and problems to be faced by the future residents of Columbia, Maryland, and to propose solutions to some of these problems. The paper is in four parts: some brief comments on how life will change for people after they move to Columbia; the problems they and the community are likely to come up against; a list of criteria for what I call a mentally healthy social structure; and some recommendations based on expected problems and these criteria.

I. Life in Columbia: How Life Will Change for Its Residents

1. Basically, life will be marked by maintenance of old patterns, which are based on enduring influences of class and position in the life cycle. For most people, life will change relatively little as a result of the move.

2. The change that will take place is a combination of aspirations sought in Columbia and the impact of Columbia on its residents. The main changes are likely to be:

   (a) Satisfaction with homeownership and with new house; increased contentment and higher morale.

   (b) Increased social life, especially if neighbors are compatible.

   (c) Greater organizational participation, especially in clubs and social groups. This does not mean intensive activity, nor does it mean a high amount of civic or political participation.

   (d) More community activity of an informal nature, such as barbecues, bowling, swimming, and so on.

Previously unpublished. Prepared in February 1964 for James Rouse, the developer of the new town of Columbia, Maryland.
(c) Formation of innumerable organizations working with people by background, especially class, education, wealth, and age.

3. Unless the community social structure is radically different from that of any other community, the participation in any cultural, and educational activities now limited largely to the upper-middle-class (the graduates of name colleges, in professional and highly technical jobs) should not be expected from either the lower-middle-class (the high-school educated and those who have attended state or local colleges and work in white-collar jobs, including technical ones) or from the working class (those with a high-school education or less, employed in factory or service jobs requiring little "intellectual" skill).

4. If the upper-middle-class population is large enough, it may, perhaps, exert some influence on the rest of the population and encourage the more mobile among it to accept the upper-middle-class ways. But the majority of people from other classes or styles of life will retain their own ways.

II. SOME POSSIBLE PROBLEMS OF COLUMBIA REGION

1. Social Isolation. The inability to get along with compatible friends, and participate in the dominant social activities. This will be most prevalent among women, and possibly the following:
   (a) Those who are culturally different and in minority and thus have difficulty in finding compatible people.
   (b) People who have come from ethnic enclaves among childhood friends and close to relatives and find it difficult to make new friends. They are homesick for the close social ties they lost, and have lived other relatives, while they are difficult to make new friends and join the new community.
   (c) People of working-class background who are making friends and joining organizations.
   (d) Negroes, especially if they are a minority who make social contact with whites, whether their hesitancy or white resistance.

2. Physical Isolation. The feeling of being "stuck" in the community, felt more strongly by women who are alone with small children all day (especially grandparent baby-sitters near at hand before), who are away from the home for several days, and drive or are otherwise immobilized in the house.

3. Financial Problems. Experienced by people who...
enough to pay the costs of homeownership, raising the children, unexpected medical expenses, and so on. Financial problems also result in worry, family tension, and protests against public expenditures and rising taxes.

4. Adolescents' Problems. Teen-agers will feel bored and socially isolated in a town dominated by couples with young children, especially if Columbia lacks the soda shops, bowling alleys, and movie theaters which serve as their social centers in the city, or if access to such facilities is difficult due to lack of public transportation and the great distances resulting from low density.

5. Community Conflicts. These are inevitable, but their form and expression are unpredictable now, for they depend on the nature of political organization, the amount of feedback between residents, government, and developers, and the cost of public services, tax methods, and the like. The probable types of conflict to be expected are:

(a) Block conflicts between neighbors who do not get along together. Children, and the way they should be raised and disciplined, are often the source of conflict among parents, and the conflicts usually reflect class and age differences in norms of child-rearing and child-disciplining. Other conflicts may emerge when old people live next to young ones (and object to their noise or children's destructive impact on flowerbeds) or among next-door neighbors with vastly different norms of lawn maintenance. These, too, are usually based on class differences, and conflict generally results after a long series of minor disagreements over specific norms and activities.

(b) Economic conflicts, between haves and have-nots, reflecting differences in styles of life and the economic difficulties of the latter.

(c) Interest conflicts resulting from diverse and incompatible interests held by residents. Such conflicts may be among old residents versus new ones, parents of school children versus childless couples, "conservatives" versus "liberals," one neighborhood versus another, and so on. The source of conflict may depend on community issues, and the locale of conflict will be in the government, in political and social organizations, and only rarely on the block. This type of conflict is inevitable and by no means undesirable in a pluralistic society; it is undesirable only if it cannot be resolved properly, leaves grudges, and results in continuing repetition of conflict.
(d) Resident-builder conflict. Some residents are likely to object to some practices of the builders and developers, especially if they do something which is against the interests of those residents.

(e) "Newness conflict," that is, conflicts reflecting the newness of the community and the unsettled state of communications, government-resident relations, and builder-resident communications. Such conflicts are likely to come at the start of the new community's life, as people test out the feedback mechanisms and the willingness of various institutions and agencies in the community to be responsive. At that time, there may also be a need for a community scapegoat to act as target for these tensions. Newness conflict is not serious or lasting.

6. Persisting Individual and Family Problems. A number of residents will come with existing problems, such as marital difficulties, drinking, children's school and discipline problems. Some people will move to Columbia hoping that newness and change of community will resolve their problems; this hope is likely to be disappointed. Persisting problems are not very visible except to next-door neighbors and friends, but they are a major source of neighbor and block difficulties.

III. CRITERIA FOR A "MENTALLY HEALTHY SOCIAL STRUCTURE"

1. The criteria that follow are intended to help achieve a social structure that encourages the mental health of the residents, or at least does not add to existing individual, family, and group tensions and problems. The assumption is that if the social structure is so set up that it does not create additional major tensions and conflicts, it will be supportive of mental health. Such a social structure will not create mental health; it will only reduce those community influences that make life difficult for some people and strengthen tendencies toward mental illness in others. Perhaps the concept of mental health is too all-embracing; what I am suggesting are criteria which encourage a satisfactory morale among the residents or do not add pressures that reduce morale. They attempt to define sociologically what Rouse calls "a garden for people," with major stress on the resolution of problems, and especially on those conditions in which developers, social planners, and policy-makers can exert some leverage.

2. Columbia should aim for a social structure which:

(a) provides for the needs of the family, and of each family member, on the assumption that if this is done, causes of intra-familial conflict will be ameliorated, or at least not increased.
(b) does not set neighbor against neighbor.
(c) creates no financial pressures on residents that can result in family tension, fights with neighbors, or community conflict.
(d) reduces social and physical isolation and provides for the lonely, the culturally different minority resident, and the people Nelson Foote calls the unselected.
(e) provides freedom of choice in block and community activities, including the freedom not to participate.
(f) recognizes the inevitability of community conflict and seeks to cope with the undesirable aspects of such conflict by
   (1) eliminating as much as possible in the preplanning of the community those problems that are likely to be insoluble.
   (2) encouraging the search for solutions and compromises as a source of solutions.
   (3) treating politics as inevitable and desirable, rather than as "dirty," and encouraging political communication and feedback, so as to prevent the distorting and scapegoating that result from poor communication and interfere with the solution of problems.
   (4) recognizing the pluralism of the community and creating tolerance for alternative views on community issues. This tolerance can best be achieved by preventing conditions in which alternative views and solutions impose severe social or financial costs and emotional threats on other residents. For example, it would be desirable to prevent a situation in which public services not used by low-income residents must be paid for by them at a cost which creates financial difficulties for them.
(g) provides not only overt or direct mental-health services but also, and more important, indirect or covert services which Leonard Duhl describes as consultation. These latter are intended to encourage community agencies to act in ways that are supportive of mental health and not to act in ways that would increase the problems of their clients. They are also intended to provide services supportive of mental health to people who are not likely to use mental-health clinics. The assumption is that the people who need to use such agencies most are least likely to do so, but will accept similar services from institutions not labeled as mental-health agencies, like doctors, ministers, and lawyers.
IV. SOME RECOMMENDATIONS FOR COLUMBIA

The recommendations and suggestions below relate to previously mentioned problems, but are keyed to the seven criteria for a mentally healthy social structure.

1. Family Life and Some Suggestions for Housing

(a) For the man: job, job satisfaction, and job security are most important, as is freedom from financial pressure. He wants his wife and children to be happy, the children to grow up properly, not get in trouble, and not have discipline problems. The more they are satisfied, the happier he is. He will want some all-male company, especially if he is of working-class background.

His interest in the house is primarily in the satisfaction of homeownership (unless renting is considerably cheaper) and in the chance for "puttering" in the garage, yard, den, or study.

(b) For the wife: welfare and happiness of husband and especially children are most important, with opportunity for easily accessible contact with other, and compatible, women next.

Her interest is in the house less than in ownership. The house is hers; it is a stage on which she presents herself and expresses herself and her sense of aesthetics and efficiency. She must like the house; it must be easy to take care of.

Differences in role priorities must be considered. Many women, especially in the lower-middle class, want to minimize (but not eliminate) the housekeeping role and maximize the mother role. This is perhaps less important to working-class women. Others, especially in the upper-middle class, want to reduce the routine parts of the mother role, that is, being a supervisor of or a chauffeur for the children. They may also appreciate the chance to reduce burdensome parts of the household routine. Levittown women find ironing most boring and depressing, and a cheap, easily accessible laundry might be popular and successful.

(c) For the children: they need most a place to be and a place to play without interfering with adults and being interfered with by them. Small children need play space close to home that does not create noise or danger to property and where they will not be harassed by adults or older children. This is also true of older children, who want ball parks next to the house, ideally. The provision of play spaces close by, yet not obnoxious to adults, is a real site planner’s challenge. Teen-agers need privacy in the house: a room in which they can entertain
free from adult interference; for example, play rock-and-roll records at high volume for their friends.

(d) For the family as a unit: my assumption is that if the spatial and facility needs of each family member can be taken care of—if all family members are satisfied and do not have to get in one another's way—the planner will be helping to reduce those causes of intrafamilial conflict over which he has leverage.

(e) Implications for housing: maximum space is most important; this is Levitt's reason for success. Privacy for each family member must be available, as well as a chance to minimize household routines and maximize opportunity for creativity—in play, in gardening, in cooking, sewing, and so forth. Some people like to garden and need a large yard; others do not and want a small one; different lot sizes may be desirable.

2. Neighbor Relations, Block and Neighborhood Life, and Implications for Site Planning.²

(a) Neighbor relations: Neighbors are important to each other for social life and mutual aid, especially among lower-middle- and working-class women. Neighbors must be accessible, yet not without loss of privacy for each house, so as to minimize the chance of neighbor being set against neighbor.

(b) Block homogeneity: Conflict between neighbors is ever-present, and since they are spatially tied to each other, it must be minimized. As noted before, much conflict is based on class differences. Block homogeneity is necessary; putting well-educated with poorly educated people or working-class with upper-middle-class people creates such conflicts. One cannot segregate by education or by child-rearing values, so price, which reflects income, is the only form of leverage. Mixing rich with poor puts terrible pressures on the latter to keep up, especially since children make demands they learn on the block.

(c) Importance of block: The block is the major social arena, the major source of friends for working and even lower-middle-class residents. Since people live most of their lives in the house and much of the rest in the block, this must be emphasized.

(d) The block and other areas: The block is very important as a social unit; other areas, such as the neighborhood, much less so. The neighborhood is too large to be a social unit; hello-exchange is a nice but unimportant form of face-to-face relationship. Neighborhoods have meaning only if they are political
units or if they are different from each other, so people can have a sense of that neighborhood. This sense is often negative; for instance, "Our neighborhood is better than yours." If the schools are set up so that parents have a compulsory, vital, and time-consuming role in them, and if most of the neighborhood has children in that school, then the neighborhood may be a social unit. I doubt that this will happen, and undue emphasis on the neighborhood is illusory. Neighborhoods may function as catchment areas for women and teen-age clubs since these groups have low mobility.

(e) Block homogeneity and community heterogeneity: The more homogeneous the block, the greater the opportunity for heterogeneity in the neighborhood and in community institutions, although even here, social stratification will develop.

(f) Some planning and site-planning suggestions:

(1) On the block there must be a compromise between privacy and accessibility; too much of either is bad. Privacy is most important; houses cannot be sited so as to put people on top of each other socially and visually. Small courts and narrow cul-de-sacs are undesirable for this reason.

(2) Social contact is determined to some extent by accessibility and, if the area is occupied by young families, by where the children play, where there is pavement.

(3) Homogeneous blocks can be separated from other blocks of a different price level if a clearly visible social boundary is available, probably one that is also expressed physically, though it cannot be a wall.

(4) A range of $3,000 in house prices will probably work on any given block, providing the lowest-price house does not look "cheap." A $5,000 range is problematical. Higher-priced houses probably need their own neighborhood, both because of property-value considerations and because their purchasers are buying status and must be socially and physically separated from lower-priced houses.

(5) It would be desirable to prevent the development of an "across-the-tracks" area; this can be done by scattering enclaves of higher-priced houses throughout Columbia and by giving areas of lower-priced houses some of the choice sites, such as on hills, near lakes.
(6) It is very important to prevent the possibility of any part of Columbia from becoming a slum. Since different builders will be building in Columbia, strict performance standards are necessary, especially for low-priced housing. Such houses must be cheaper to maintain than higher-priced housing.

(7) It might be desirable to segregate some blocks or larger areas by population characteristics and interests: groups of houses suitable for families with teen-age children, or houses with large yards for enthusiastic gardeners, or houses for retired couples might form enclaves for those people who want neighbors of similar age and interest. This does not prevent the planning of other blocks in which such houses are mixed with those likely to be occupied by young families.

(8) Neighborhood shopping areas should include soda-shop hangouts for teen-agers—perhaps one for young teen-agers, another for older ones—with a public subsidy to the owner for providing this service if the store is not profitable. Living-room type clubs, as suggested by Leonard Duhl, might include places where women can come to have morning coffee with their children and other neighbors, providing the coffee could be a source of funds for community organizations. There might also be garages or gas stations that would serve as social centers for men and boys interested in cars. Commercial areas and especially gas stations are poison to the property-value conscious and to status-conscious homeowners; they must be very clearly separated from residential blocks, preferably without reducing access. The same applies to children’s play areas, as noted in IV-1-(c), above.

3. Financial Pressures

(a) The existence of financial pressures on residents is perhaps the clearest illustration of the way in which a social or political structure can cause personal, familial, and even community conflict.

(b) Solutions:

(1) Tenant selection on the basis of income: One method is not to admit people who cannot afford to live in Columbia. This extends not only to affording the price of the house but to meeting the cost of living in a new community,
especially with a growing family. If a reasonable estimate of the cost of living can be developed, it is possible to decide who should not be allowed to live in Columbia. The determination must be based not only on present income but on expected income in the future.

This solution has several drawbacks. First, it discourages the goal of having all those working in Columbia living there. Second, builders who must sell a quota of houses are likely to resent any restriction on their market. Here the developer must make a policy decision, which ought to ensure that builders will not be punished financially by such market restrictions, but also that the long-term welfare of the person and the community is considered. To my mind, letting people buy in Columbia who clearly cannot afford it and are not likely to be able to is to hurt them and the community.

(2) Subsidies: People who work in Columbia but cannot afford to live there ought to be given some sort of subsidy so they can live there. Who they are depends on the wages and salaries, as well as house costs, and cannot now be determined.

(3) As noted earlier, people with financial problems can release their frustration only on themselves, the family, or the community. Tax policy must make sure that this consequence is minimized. Taxes are only a scapegoat, of course, but rapid increases in taxes at a time when other family expenditures are rising will surely lead to the appearance of the scapegoat. The more public and other expenditures are programmed prior to occupancy—perhaps built into the house price or rent—the more this can be avoided.

4. Social and Physical Isolation: Some Possible Remedies

(a) Social and physical isolation affect only a minority of the population; most people in Columbia will probably report just the opposite. Yet if the goal is a garden for people, the isolation that does occur ought to be minimized. Solutions depend on the type of isolate and the cause of the problem.

(b) Social isolation. Solutions for types of social isolates:

(1) Families used to close ties with parents, siblings, or extended family, and people who have lived all their lives in one neighborhood. People—especially women—who have been used to daily contact with parents (this will be
mostly ethnic and working-class women with a close tie to mothers) should be told that once the novelty of the house and community wears off, they will be quite lonely for their mothers and should take this into account before they buy. However, since the men will want to get away from in-laws in many cases, and the women do want the new house (often it is a matter of having one’s cake and eating it too), more positive solutions are desirable. There are at least three. First, the phone system should be set up so that calls to Baltimore and Washington will not be toll calls, enabling women to call their mothers daily if they wish. Second, good and fast public transportation to reach these cities should be available. Third, housing for the older generation, and particularly for parents of Columbia residents, should be provided. In most cases, parents will not leave their present neighborhoods or exchange an inexpensive old house for a more costly new house or apartment unless they are given subsidies.

(2) The culturally different who are in a minority and cannot easily find friends, and working-class people who lack the social skills for making new contacts, particularly older people, poorly educated ones, and ethnic-group members: They will be difficult to reach, but a few solutions are worth trying. One would be to have the local newspaper and TV station present full descriptions of suitable organizations; not just to give the names and activities of these organizations, but to describe their membership in class and other terms so that isolated people will realize where they can find compatible people. Another solution would be a column in the paper in which people who want to find others with common interests or want to start new organizations can express their need. A third solution is to make doctors, ministers, and other counselor-caretakers, as well as leaders of existing organizations, aware of the problem of social isolation and encourage them to contact such people or advise them when they come for help. A kind of “welcome wagon” that sells organizations and not just merchants might be in order if it is designed to encourage the socially isolated.

(3) Reaching the socially most isolated: The solutions listed in (2) above are likely to attract the more easily reached;
the most isolated will be difficult to reach. There is no easy solution to this problem. If possible, counselors and leaders—and all residents—should be given to understand that social isolation is often a social structural problem, and not a personal failing. In addition, the community should make it as easy as possible for people to form organizations and to get into those already formed. Socially unskilled people are often fearful of formal organizations and formal meeting places. One solution—desirable for other reasons as well—is Leonard Duhl’s living-room club, where a more informal atmosphere for organizational activity than is possible in a community center can be obtained. Such clubs might especially encourage the formation of block or subneighborhood social or game clubs (card-playing) which attract the women not “ready” for formal organization. (See also IV–5, below.)

Some of the socially isolated will be people with marital or personal emotional problems. Probably they cannot be reached by organizations, but eventually they will take their problems to physicians and ministers. These should be made sensitive to the nature of this type of social isolation and should be given a list of what might be called “helping neighbors” who can try to integrate such people into a formal or informal organization. Ministers often find such helping neighbors in their congregations.

(4) The “racial isolate”: Although Columbia will be racially integrated, it is quite likely that much of the informal social life will remain segregated. Well-educated Negroes will be able to find white friends among the liberal segments of the upper-middle-class group, but others will not. If sufficient numbers of Negroes are easily accessible to each other, there should be no problems; if not, some Negroes, especially women and children, may feel socially isolated. Like the people described in (1) above, they will need to have easy contact with their old friends in Baltimore and Washington, or else they may not come to Columbia in the first place. If there is a sizable Negro population, it is quite likely that all-Negro clubs and informal social groups, and probably even churches, will be formed. While it would be desirable, ideally speaking, for integration to be complete, I think it is preferable to have all-Negro social
groups—especially if they are set up voluntarily and do not only reflect rejection by white groups—rather than to force Negro families to live in social isolation.

I raise this problem not because it requires immediate solution, for it does not, but only because it will come up eventually in the community. While it would be undesirable to set up all-Negro neighborhoods, or even all-Negro blocks, I think it would be equally undesirable to have only one Negro family per block, especially in lower-priced areas of Columbia, for this would almost certainly guarantee social isolation for that family.

(5) Teen-agers: If Columbia attracts a large proportion of young families, teen-agers will be a "cultural" minority, and they will be isolated from each other because they have little mobility unless they have cars. As the number of teen-agers increases, they will be less isolated from each other, but they will likely be considered an undesirable minority by the adults. Indeed, in many suburban communities adult-teen-age conflict is more prevalent than class conflict. The teen-agers' right to their own "youth culture" must be acknowledged, and facilities must be provided where they can be free to act as teen-agers and be teen-agers. Moreover, it must be recognized that there are many types of teen-agers, differentiated not only by class but also by age. A fifteen-year-old will not talk easily to or associate with a twelve-year-old. Adults are inclined not only to lump all teen-agers into one group but also to supply them with facilities that are, by adult criteria, good for them, alienating them unnecessarily.

(6) Older people: The elderly are also a cultural minority, in some ways as immobile as teen-agers. Sick older people may need special facilities, but healthy ones do not. They may, however, need opportunities to find compatible people, as do other kinds of social isolates. Some old people will want "senior citizens groups"; others will avoid them like the plague; but in any case, the tendency of young adults to dictate how old people should act must be discouraged. The more the old people, like teen-agers, can be given a useful function in the community, the less likely the possibility of social isolation or the feeling of being useless.
(7) The "useless": Just for the record, it might be relevant to suggest that teen-agers, old people, and especially unemployed people can easily feel useless in the community, and uselessness leads to social isolation and psychological deterioration, among other things. The only real solution is to do away with the cause of social uselessness.

(8) The "organizational" isolate: This term describes people who need organizations that are not likely to exist in Columbia. I am thinking here primarily of members of minority religious groups like the Greek Orthodox church, which may not have enough congregants in Columbia to build a church or even to organize a congregation. The community should set up car pools or provide chartered buses to allow these people to go to Baltimore or Washington where congregations are available.

(c) Physical isolation: Proper house and site planning can help to reduce it; for instance, by providing nearby play spaces for small children which do not need supervision and a porch where children can be put out in bad weather. Equally important is a good intracommunity public transportation system—jitneys, perhaps—which can allow women who do not drive to get out of the house. Since many would (or would like to) head for the main shopping center, there is no reason why such a transportation system cannot be subsidized by the main shopping center if, as I expect, a subsidy is needed. Day and nursery schools will also reduce physical isolation, but only if they are designed to attract the kind of people who now shun them.

5. Freedom of Choice in Community Life

(a) It is important to stress again a comment made in 1-3 that most people will not participate actively in community organizations, even if they are members. Nor are they likely to come in large numbers to agencies that provide adult education and self-improvement. Unless the developer wants to limit the community to the upwardly mobile, the self-improvement-seeking and tradition-breaking minority, people's right not to join ought to be considered.

(b) Even so, organizational and educational participation should be encouraged. The best way to do this is to be "market-oriented": to know what potential participants want from a group and then provide the incentives that will attract them. Appeals to the
duty of community participation and to one's obligation to improve oneself will not work. For example, if mothers are to be encouraged to send children to nursery and day schools, such schools will have to cope with the reason why working- and lower-middle-class mothers who do not work are hesitant now to send their children.

Moreover, preplanning of institutions requiring resident participation ought to be limited as much as possible, perhaps only to those types that, for site-planning and other reasons, must be planned prior to occupancy. In order for institutions to be market-oriented, they cannot be set up until we know what kinds of people they are intended for, which cannot be done until people have moved in. Second, it can be predicted safely that there will be a large number of potential leaders among the residents, some wanting to set up specific organizations, some ready to initiate whatever is being demanded. Although their motives for leadership are unlikely to be purely community-minded, they make effective leaders and should be encouraged. Moreover, many organizations will be formed, partly in order to "sort" people by a variety of background and interest factors—the more so if people of different ages, religions, and so on live side by side. Once these organizations are formed, they will be looking for programs and for things to do in addition to the major activity, sociability. It may then be possible to enroll some in the kinds of educational, self-improvement, and community-service schemes that have been proposed by several Work Group consultants.

6. Conflict Reduction

(a) Solutions for conflict reduction are difficult to propose a priori, since sources of conflict cannot now be predicted. As a general principle, two polices may be made. First, wherever and whenever possible, pluralism ought to be encouraged. Operationally, this means minimizing the need for one common decision or for unitary solutions to problems where there is disagreement over the nature of the problem or the best solution. This is, of course, an argument for decentralization, but not necessarily a real or spatial decentralization because, as indicated in IV–2–

(b), neighborhoods are not social units. In fact, people living together in a small area often find it more difficult to agree on a decision. If they have neighborhood obligations toward each other, they are likely to suppress disagreement and to avoid
discussing controversial issues or making unpopular decisions. Unless the population is so homogeneous that there is pervasive consensus, the "decision-making area" should be large, since conflicting interests can be translated into compromise solutions more easily among people who are not close to each other, socially and physically.

Second, community decisions which force one group in the community to pay for facilities or services which they will not use, or which they oppose, ought to be minimized. People are willing to live and let live—that is, to be tolerant of diversity—if it does not demand a personal sacrifice or create a threat to their own point of view.

The government of the community, public allocation policies, and taxing procedures ought to be designed with these two points in mind.

(b) Community conflict: Much of this will be class conflict, especially between the have-mores and have-less. The two principles suggested in (a), above, can minimize the kind of insoluble conflict that leads to irreparable and recurring fights. Another principle which ought to be applied in planning for conflict resolution is the minimization of status deprivation, that is, feelings of inferiority on the part of those who have less, be this income, education, prestige, or power. For example, schools and other public agencies should be so designed that the least "desirable" clients are treated as well as the more desirable ones. Of course, national values, which say that in a middle-class community, middle-class people are "better" than working-class ones, will be operating in full force, but public institutions should be designed to fight the tendency to reward the "better" and deprive the "inferior." In the high school, vocational-training programs should not be poor cousins to the academic (college-preparatory) programs. Moreover, opportunities for status should be made available to the former in extra-curricular activity in fields other than athletics; for example, by providing vocational students with a chance to build things needed by the community or rewarded by the national culture, such as cars. Similarly, rock- and-roll combos should be encouraged as much as student symphony orchestras.

(c) Political conflict: Class and area conflicts will express themselves through political conflict, not only between parties but between resident groups and builders and even between organi-
zations, such as the League of Women Voters and veterans groups. This is inevitable; it is undesirable only if the conflict cannot be resolved. Political parties are often good brokers, but they do not participate in conflict resolution when the issue conflicts with other party priorities, when there are divergent opinions about the issue inside the party, and when the issue is so controversial that any party which advocates it would be hurt politically. Under such conditions, the issue is likely to be driven underground, as sometimes happens when a political conflict has religious connotations. Driving an issue underground is undesirable only when the result is to interfere with reaching a solution or when long-lasting grudges are created which interfere with solutions to other issues.

Controversial issues are always difficult to resolve, but attempts to alleviate useless conflict and to direct all conflicts toward the formulation of a compromise decision are worth while. One general principle, described under III–2–(f), is to encourage overt discussion of all controversies and conflicts, which can be aided by maximizing feedback and inter- as well as intra-institutional communication. Another possibility is to set up a community ombudsman, or what the Work Group called the “king’s representative”: a group of community members from all political parties who would have the responsibility of opening up those issues that are in danger of being driven underground and airing them—perhaps in a quasi-judicial institution, a kind of community supreme court.

Finally, conflict, and especially underground conflict, encourages the restriction of information, and this in turn leads to rumor. Rumor has positive functions, but it also has negative ones. A weekly column in the local paper and a program on the TV station might be set up to discuss the rumors that are current, explain why they came about, provide information that would eliminate falsehoods, and thus reduce unnecessary tensions that interfere with the solutions of conflicts and disagreements.

7. Mental Health and Community Consultation Services

(a) Agencies such as clinics and family-counseling agencies which provide overt mental-health services ought to be set up in such a way that people will be encouraged to come to them. This may require a number of clinics differentiated by type of clientele, and notably by level of education. Present agencies reach only the most easily reached, especially the upper-middle-class popu-
lation. New clinics, staffed with people who understand lower-middle- and working-class culture, problems, and clients should be provided.

(b) A more feasible method of attracting the hard-to-reach is to make sure that the agencies to which these people now take their problems can provide mental-health services indirectly or covertly. The major agencies are physicians and ministers, and both ought to have training in psychiatry and counseling so that they can provide mental-health services.

(1) If churches are given free land, the developer should require that ministers selected by the national denominations are trained in pastoral counseling.

(2) If the developer has some control over the entry of physicians—for example, if group practice and other agencies are preplanned—physicians who have some training in psychotherapy should be given priority. (Psychiatrists might be part of the group agency, but this will not solve the problem of reaching those who now resist approaching them, even on referral.) If possible, medical practice, whether in the group or by an individual, should be so set up that the more routine tasks—giving shots and taking care of minor illnesses like flu—are left to nurses or “assistant doctors,” partly to reduce the costs of medical service and partly to make sure that physicians spend their time and energy on the kinds of service for which they have been trained.

(c) Public officials who deal with social and individual problems should be encouraged to accept some training in social psychiatry and sociology that would make them sensitive to the “real” problems with which they are dealing. For example, policemen should be trained to realize that improper action on their part toward juvenile offenders is a major cause of making them feel and become delinquent; judges who sit on domestic-relations cases should understand, rather than punish, cases of intra-familial conflict that come to court. Government officials should be trained to look for the real causes of community conflict. Needless to say, the agencies in which these officials operate should be so set up that the tendency to punish the emotionally disturbed individual, or the individual who commits antisocial acts because the social structure does not minister to his needs (such as the teen-ager who expresses his boredom or his resent-
ment against a poor school system through delinquent acts), is minimized.

NOTES

1. My observations and predictions are based on my empirical research in existing bedroom new towns, especially Park Forest, Illinois, and Willingboro (Levittown), New Jersey. Thus, I am sensitive to the issues and problems that developed in these communities and perhaps insensitive to others. I assume, however, that the everyday life of the Columbia resident will not be very different from that of the Levittowner or Park Forester, especially since everyday life is not affected significantly by the structure of the formal, physical, and public community. Moreover, I assume that the dominant population of Columbia will be a young, lower-middle-class family-raising one, with smaller proportions of upper-middle- and working-class people as well as middle-aged and older families in their midst. By average, then, I mean to refer to that dominant population.

Park Forest and Levittown are, of course, bedroom communities, and the paper makes no comments about the everyday work life of the breadwinner or on the relationship between work and residential life. Since most middle-class residential areas are, even in the city, bedroom communities which the breadwinners leave during the work period, I assume that the inferences I have made from my studies of bedroom communities will be applicable to life in Columbia.

2. I use block as a generic term, not a site-planning concept. I mean that area, in a single-family-house community, that encompasses the four to six houses on either side of a given house with which some social contact is possible and likely. Presumably one can identify “blocks” for different house types; for example, for apartment houses with many apartments on one floor.

3. Well-educated people who are a cultural, ethnic, or religious minority usually have the social skills and the mobility to find compatible people and probably do not need help in relieving social isolation.


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