

**CREATIVE
DEMOBILISATION**

Vol. II :
**CASE STUDIES IN
NATIONAL PLANNING**

INTERNATIONAL LIBRARY OF SOCIOLOGY AND SOCIAL RECONSTRUCTION

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CREATIVE DEMOBILISATION

Volume II

Case Studies in National Planning

Edited by

E. A. GUTKIND

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PREFACE

THE following memoranda deal with some selected case studies of national planning. They express the personal opinions of their authors. They should be considered as an essential interpretation or illustration of the approach to national planning indicated in the first volume. The formulation of general principles must be supported by the sub-structure of actual case studies. Both are complementary to each other and of equal importance.

The contributions are grouped similarly to the main chapters of the first part. The memorandum on "Some Social Aspects of Industry in Relation to Planning" and "The Questionnaire on Industrial Localisation Factors" are staff work of the Demographic Survey and Plan as well as the last three memoranda. A brief comment is, however, necessary with regard to the chapter on "Ill-balanced Communities". This memorandum is based upon the premise that the combination of agriculture and mining is not compatible with modern conditions. This might be true if one thinks of the archaic method of giving small allotments to the miners. Yet this approach touches only one side of the problems involved. It is suggested, therefore, that detailed investigations should be conducted for every mining *region*—not only for the individual mining community—with the aim of gaining more factual knowledge as to the relationship between agriculture and mining under *modern* conditions. First, we must think in terms of regional and not of local possibilities. Secondly, we must take into account the technological development in coal-mining and the potential displacement of labour. Thirdly, the trend towards fewer and larger enterprises is also of importance. These are only some of the factors which have a decisive bearing on the reorganisation of the structure of settlement in mining districts. Valuable material, in this respect, can be found in American publications and especially in the Report of the National Resources Committee, "Technological Trends and National Policy". On the other hand, corresponding adjustment in the agricultural field is likewise to be expected. To dismiss a combination of agriculture and mining as "archaic" would not do justice to the problems which are inherent in national planning. We should await the results of unbiased research before we arrive at definite decisions. In any case we must think in terms of potential future development in both agriculture and mining and not try to solve this problem by expecting help from the past.

All other chapters are voluntary contributions towards the

work of the Demographic Survey and Plan by experts who are especially interested in the problems of national planning. I wish to express once more my thanks for the readiness with which they extended their help to our work.

It should be emphasised that only selected Case Studies could be presented. It was impossible to cover the whole field of national planning. Its scope is too vast and much detailed research work is needed before definite conclusions can be drawn.

Just as the contents of this volume are the indispensable complement of the first one, so the various memoranda of each group are complementary to each other and should be considered as an entity.

The "Extract from some American Publications"—Appendix A—is no more than an attempt to convey some knowledge of the experience gained in U.S.A. which is of special significance to national planning. The "Data concerning the Structure of Typical Towns" might be a starting point for investigations as to what is a sound or ill-balanced community. This knowledge is an essential prerequisite of a redistribution of population and industry.

Without the help of the 1940 Council and Mr. G. L. Pepler of the Ministry of Works and Planning it would have been impossible to compile the material contained in this volume.

It is not for me to claim any credit for this volume. In this case I am only the editor, though I share the responsibility with the authors of the various memoranda in so far as I suggested some of them or asked for special permission to include others in this book.

E. A. G.

LONDON,
July 1942.

APPENDIX A

THE following is a brief extract from some American publications on the Greenbelt Towns and on other aspects of planning which have a special bearing on the problems dealt with in this book.¹ *E.A.G.*

Briefly, a plan for a community should so arrange its physical elements that the community serves to the best advantage the use intended; this use is its *function*. The component parts of the community should be related to each other and to the whole in a rational and organised manner, this manner constituting its *form*. Any plan in the last analysis rests not only on its own qualities, but literally upon the natural qualities and characteristics of land. To use land intelligently is to recognise *its* form and function as well as the form and function designed to be superimposed upon it. To be successful, the two should be compatible; that is, there should be *fitness* of the whole to its site and surroundings.

(A) Planned towns were largely created for the following reasons :

(1) As seats of government, (2) as military outposts for colonising newly acquired frontiers, (3) as centres of protection from invasion, (4) for religious and political purposes, (5) as ports on deep water or head of navigation, (6) at crossings of caravan routes, (7) at water-power sites, (8) at bridges and straits, (9) in a cool climate, and (10) in America, by land development companies for profit. Each reflects in its dominant motif that function and culture of its particular period: walls, agora, cathedral, theatre, fora, castle, palace.

(B) There was no continuing policy of planning throughout any long period. The consideration of the plan as a finished product failed to recognise the town as dynamic. Thus, no provision was made for the disposition of future growth at the periphery.

The advent of the industrial era and modern life with the resulting congestion of urban centres has brought about a new objective which the planned town has been asked to fulfil and consequently a new conception of its significance. There have been during this period the same attempts to depict the ideal, and concrete attempts at these ideals became known as model towns. In defining a model town, Grosvenor Atterbury has set forth the following principles, which apply as well to the somewhat broader conception of the planned community as considered in this study. While the particular interest of this study is in evaluating planned towns which have functioned over a period of years, his statement indicates what should be found in any of them before they can be considered as completely meeting the situation.

1. The most distinctive feature is the essential element of col-

¹ The quotations are mainly from the Report on "Urban Planning and Land Policies", National Resources Committee, 1939.

lectivism upon which the planned town should be based—collective design, development, and control.

2. The aim should be towards higher standards and more efficient handling of land development and distribution.

3. The science and art of town planning and good housing should be applied.

4. The model town should demonstrate to the individual the advantages of a reasonable self-restraint, of the subordination of his own æsthetic impulses to a general æsthetic scheme.

5. It should cause actual money-saving in lay-out and at the same time provide better conditions than could exist under "individual methods".

6. No experiment or demonstrations should be made that could only be duplicated with the aid of philanthropy, charity, or paternalism, or in which collective action might not be equally possible or safe. It must be organised and developed on a business basis and must succeed as such.

Kapuskasing, Ontario, Canada.

This town was incorporated by Chapter 36 of the Statutes of Ontario, 1921. This act authorised the Government of Ontario to enter into an agreement with the Spruce Falls Co., Ltd., for the planning, laying out, and establishment of a town site. . . . The principal reasons for the Government's action in this matter were to prevent the town becoming a "closed" or "company" town, the consideration that they could not always depend upon the lumber industry, and the policy of the Dominion Government to encourage the development of agriculture as well as lumbering, thus promoting the balanced development of the entire section.

Greenbelt, Prince George's County, Md. .

The present plan, which provides for 1,050 dwelling units, is essentially a series of super-blocks, each of about 15 acres, which surround a central area devoted to business, school, and community centre. Pedestrian underpasses which lead to the central area have been provided in each block under the main thoroughfare. Two concentric main thoroughfares with cross streets at intervals provide access to the blocks and group garages. The area devoted to housing and intensive urban development comprises about 225 acres, with the remaining area forming a permanent greenbelt about the town site to be utilised as allotment gardens, small farms, recreational and woodland areas. . . . The community is designed to serve an average income group of \$1,500 per year, with an estimated range of \$1,200 to \$2,400. . . . The community has not been planned as a self-contained town with regard to employment, although about 200 acres, part of which lie within the 2,000 acres of the town site, are available for industry. It is primarily intended for Government employees working in the research centre and in the north-east section of the District. It is anticipated that the research centre will provide employment for about 5% of the expected population.

However, it was planned that all of the community's needs should be met, so far as possible, through co-operative trading. . . . Each group of houses is provided with one furnace which heats all of the units in that group, thus requiring only one basement room. . . . In addition to the common park areas within each superblock, the central area provides a school and community centre, and a business group of 15 store units to be operated by the community organisation for its own benefit. An athletic field is located adjacent to the school. Water areas and other recreational areas have been allocated in the greenbelt, which will be available to the residents of the county as well as to the community.

The Resettlement Administration describes the basic programme of the Greenbelt Towns as follows: "To obtain a large tract of land, and thus avoid the complications ordinarily due to diverse ownerships; in this tract to create a community, protected by an encircling greenbelt; the community to be designed primarily for families of modest income, and arranged and managed so as to encourage a family and community life which will be better than they now enjoy, but which will not involve subjecting them to coercion or theoretical and untested discipline; the dwellings and the land upon which they are located to be held in one ownership, preferably a local public agency to which the Federal Government will transfer title, and which agency will rent or lease the dwellings but will not sell them; a municipal government to be set up, in character with such governments now existing or possible in that region; co-ordination to be established, in relation to the local and State governments, so that there may be provided those public services of educational and other character which the community will require; and, finally, to accomplish these purposes in such a way that the community may be a taxpaying participant in the region, that extravagant outlays from the individual family income will not be a necessity, and that the rents will be suitable to families of modest income. To develop a land-use plan for the entire tract; to devise a system of rural economy co-ordinated with the land-use plan for the rural portions of the tract surrounding the suburban community; and to integrate both the physical plans and the economies of the rural area and the suburban community."

The site of each Greenbelt Community was studied carefully and every acre was assigned its logical function in an expertly designed community plan. A town common forms the centre of each community. Around it are grouped a community building designed to serve both as a school and a town meeting hall, stores, post office, bus terminal, and other offices.

The residential area surrounding the town common is laid out with a comparatively few streets. Usually the blocks are five or six times the size of the average city square, and each of them resembles a small park with about 120 dwellings around its edges. This arrangement has many advantages. Houses face the lawn and

trees on the interior of the block, rather than barren pavement. Although each house has its own yard, much of the block's interior serves as a playground for the entire neighbourhood. A network of paths running through this park eliminates the need for sidewalks along the streets. Paving, water-works, and sewer lines can be installed at a considerable saving under such a super-block system. The most distinctive feature of the three communities is the greenbelt from which they take their name. This is a broad girdle of open land intended to protect the community from overcrowding and undesirable building on nearby property. Part of the surrounding greenbelt is reserved for parks, forests, and playgrounds. Garden tracts also are set aside for families who wish to supplement their incomes by raising their own fruit and vegetables. The remainder is cultivated by full-time farmers, who may market their produce in the community stores.

The town plan has been especially designed to meet the problems created by modern motor traffic. Facing houses away from the street, with playgrounds and paths removed from street's edge, reduces traffic dangers. All homes, moreover, are removed a considerable distance from arterial highways. Underpasses for pedestrians have been built at points where footpaths cross busy streets. Ample allowance has been made for future expansion. All three communities are designed to accommodate an expected growth to three or four times their present size. Greenbelt now has 885 homes, but its sewer mains, water-works, roads, and utilities can serve an ultimate population of 3,000 families. Greenhills, with 676 homes and Greendale, with 572 homes, are built to take care of similar expansion. Negotiations with private capital for construction of additional homes at Greenbelt under a limited dividends arrangement are already in progress.

Homes are built in a variety of types and sizes to fit varying family needs. In Greenbelt 574 homes are group or row houses, which are less expensive than detached types; 306 are apartments and 5 are detached houses, built as an experiment in prefabrication. All are simple in design, but efficient and modern. All meet strict standards of comfort, ventilation, sanitation and privacy, and all are built to stand for 75 years or more with lowest possible maintenance costs.

Greenbelt is situated in Maryland about 13 miles from the centre of Washington. The total demonstration comprises 12,259 acres (cost about £18 10s. per acre), of which 8,659 acres are under the jurisdiction of the Department of Agriculture and are occupied by a research station experimenting in agriculture, forestry and soil conservation. To the Greenbelt Town 3,600 acres were allotted. Of these 967 were set aside for the social and economic needs of the community as follows :

- 217 acres of good buildable land for dwelling units and community facilities ;
- 500 acres adjacent to community reserved for future expansion ;
- 250 acres lying in a valley-like area enclosed in the town's crescent shape for recreation.

The remaining 2,633 acres are to be used as follows :

- 157 acres devoted to small farm units,
- 276 acres assigned as pasturage for town dairy,
- 400 acres set aside for woodland and forest,
- 80 acres of wasted land to be reforested,
- 107 acres for allotment gardens,
- 1,593 acres to form the outer greenbelt and for recreational use.
- 20 acres for community school purposes.

Radburn, Bergen County, N.J.

Established in 1929 by the City Housing Corporation within the corporate limits of Fairlawn Borough. Population, 1936, approximately 1,450. Site and housing planned by Henry Wright and Clarence Stein, planners and architects.

About 2 square miles of land lying north of the centre of Fairlawn was purchased, and an industrial district of 127 acres was set aside. Essentially, the objective of the founders was to provide a community, based upon garden-city principles, which would provide (1) a maximum of convenience for the movement of motor traffic ; (2) a minimum of conflict between motor and pedestrian movement ; and (3) all possible improvement over current custom in the consideration of the health and happiness of residents. The adaptation of the cul-de-sac, the use of the superblock, a system of interior park areas, the designation of independent park and motor entrances to each house, and the separation of pedestrian and motor traffic, are the outstanding features of the plan. Superblock sizes vary between 35 and 40 acres in area, each surrounded by wide traffic streets, giving access to a series of narrow cul-de-sac streets averaging about 275 feet in length, around each of which are from 10 to 18 dwelling units. Linear park areas of from 3 to 7 acres were formed in the interiors of the superblocks. These areas, connected with each other by grade separations at the traffic street rights-of-way, form not only the park system of the town but the facilities for pedestrian circulation as well. However, the scheme was intended as an attempt not only to reduce the friction between wheeled and foot traffic, but also to reduce excess costs in street and underground utilities. The resultant saving expected is set forth by Henry Wright in a statement in *The American City* of December, 1928 : ". . . in order to appreciate the economies of the plan, it is necessary to examine an individual lane. This lane contains 16 house lots averaging 43 feet wide, or 680 feet of frontage. The lots are served by $\frac{1}{2}$ of 230 linear feet of utilities on the main street and 300 lineal feet from the centre of this street to the end of the lane, a total of 415 lineal feet of utilities or 26 feet per lot. However, let us suppose the street end of the lane containing the first 10 lots to be doubled on axis A, forming a normal block 400 feet long containing 20 lots, averaging 45 feet. This would require twice $\frac{1}{2}$ of 230 lineal feet of utilities on the two end streets, and 480 feet of utilities from centre to centre of the main streets, a total of 710 lineal feet for 20 lots or 35.5 lineal feet of utilities per lot,

an increase of 36% in utilities required in the Radburn plan. In other words, in a normal street plan a lot 43 feet wide will require 21½ feet of utilities (43 feet shared with opposite lot) on its front line and 13½ feet (60% extra utilities on side frontage) making a total of 35 feet. At Radburn a 43-foot lot requires a total of 26 feet of utilities, an excess of only 4½ feet, or less than 20% for side-street waste and intersections. Admitting the obvious problems brought up by this or any other new method of planning, it would seem worth an experiment to save from 25% to 30% of the utilities now required in residential neighbourhoods.

The most striking feature of Radburn is the interior system of parks and the grouping of the houses. In spite of the elimination of the "rear" entrance, the cul-de-sac still has the appearance of a rear approach and the suggestion of an alley. This is largely due to the presence of pole lines, the inevitable use of the abutting yard for service purposes, and the concrete centre-drainage pavement. All of these items are looked at askance because they are commonly associated with alleys rather than because they are organic defects. This brings up the question of the practical limitations in the abolition of the "rear" yard, and the importance to be attached to the street picture. If, however, the streets are considered as purely functional and utilitarian boundaries for the interior parks and the social unity which the latter suggest, another consideration arises in that less than 20% of the houses actually face on park areas.

Community Facilities.—The social success that has been realised at Radburn rests largely upon the following considerations: (1) The physical plan has provided facilities in a pattern which has turned the focus inward on to the parks, school, swimming pool, etc., and relegated to the periphery the conflicting influences of traffic and business. By this arrangement, the mechanics of encouraging a unified social life have been facilitated. (2) A social programme was provided with great thoroughness. (3) The age composition of the population is below the general average, being around 35 years. A large percentage are college graduates, and the earning capacity of the families is on a comparable level. These elements offer another factor for congenial social activity. In addition, between 25 and 30% of the population are children, a large percentage of whom are under school age. (4) The lack of community life in metropolitan New York has drawn together a group of more or less socially unattached persons, each seeking a common element. . . . It has been observed at Radburn that in those instances where incomes varied widely, difficulties were encountered in regard to the provision and maintenance of recreational facilities by an association dependent for its support on fees or assessments. The discord comes, of course, in the inability of the poorer members to pay the current fee while at the same time requiring, at least, the same facilities.

The "company town" is financially an adjunct of the factory, and short-sighted desires of the factory may readily harm the town.

In the relatively few cases among the towns selected for study where such short-sightedness has prevailed, one or more of the following objectionable features have been noted. They arise largely from the consolidation in a single agency of the functions of landlord, employer, and town manager. These are not all mutually exclusive, but react in many ways on one another.

- (1) Poor quality of housing due to cheap construction.
- (2) Poorly planned and inadequate provision for recreation.
- (3) Too small an area and population for an adequate social life.
- (4) Insufficient attention to management.
- (5) A policy of housing the greatest possible number of workers in each dwelling, with bad social results.
- (6) The use of low rents, based on insufficient accommodations, as a lever for low wages, so making a circle of sub-standard living.
- (7) Tendency to give overtime work and such special opportunities exclusively to tenants of company houses.
- (8) Similarly, tenancy of company houses depending on "satisfactory" behaviour in the factory.
- (9) Company control through subsidy of schools and churches.
- (10) Company control of stores, tending to monopoly and too high prices.

The following reasons for the selection of any particular site by industries were given in response to questionnaire and interview as the primary factor or factors governing this selection. Since several reasons were sometimes given for one community, the totals of the percentages of course exceed 100%.

GENERAL CONSIDERATIONS AFFECTING LOCATION OF INDUSTRIAL TOWNS

	%
Existing industry	32
Presence of other cities or a metropolitan region	27
Needs of the proposed industry	23
Climatic considerations	20
Broad topographical considerations	20

SPECIFIC CONSIDERATIONS

	%
Rail transportation	39
Access to raw materials	36
Available water or hydroelectric power	27
Adequate labour supply available	18
Available industrial clear water	16
Nearness of a market or markets	13
Lower land costs	13
Utilisation of by-products	9
Facility of processing	9
Water transportation	9
Decentralisation or freedom from congestion	9
Lower operating costs	7
Land previously owned by the industry	4

The communities planned and developed by governmental agencies fall in general into three classes: (1) power and reclamation development; (2) war emergency; and (3) redistribution of population. As in industry the community locations were largely determined by the activity for which they were established. The permanent war housing developments had two considerations in mind after a shortage of housing in any one vicinity had been determined: first, to provide homes for war workers in shipyards and munition plants on adequate sites, favourably located with reference to the industries they were to serve, with regard for local conditions, limitations, and war-time emergency; second, to take into consideration the adaptability of the development after the war to permanent community use in company or in individual ownership.

DISPOSITION OF THE BUSINESS DISTRICT.

The disposition of stores at the entrance of the principal street at Hilton and in the interior of the development at Cradock is worthy of comparison. Both developments are similarly disposed in relation to main highways and entrance street. The arrangement at Hilton seems preferable for several reasons. First, business is removed from the interior to the main highway, to the mutual advantage of both business and residential areas. Second, less frontage of residence on the highway and more in the interior of the development results, and third, more persons living within the development pass through the business area to and from their work.

DISPOSITION OF OPEN SPACES.

In the relationship of recreational areas to residential districts, Alcoa is unique in its linear park arrangement enclosing what are essentially small residential neighbourhoods. The central park at Fairfield, Ala., is effectively used by the residential areas on all sides for passive as well as active recreation. It has a tendency to exert a social pull which has aided in creating a worth-while community spirit. Radburn's linear park system forms essentially the base upon which the residential groups are superimposed.

Summary.—There is an interesting relationship to be observed in the disposition of industrial, business, and recreational areas in relation to the residential areas they serve.

1. Industry may take in varying degrees one of three forms in relation to residential area:

- (a) The central industrial area.
- (b) The circumferential industrial area.
- (c) The detached industrial area.

2. Business may take in varying degrees one of five forms:

- (a) The central business area.
- (b) The lineal business area.
- (c) The business area on the periphery, usually at the main entrance.
- (d) The central business area touching several surrounding residential units.

- (e) The scattered localised business area.
3. Park and recreational areas may be disposed in :
- (a) Central compact areas.
 - (b) Lineal marginal areas.
 - (c) Scattered local areas.
 - (d) Lineal interior systems.

An important recent development in street-pattern design has been the use of the so-called superblock. In this scheme, the secondary streets providing circulation within the community are so spaced as to produce very large blocks. As applied at Radburn, short culs-de-sac give local vehicular access to the dwellings within the blocks. The secondary streets or "motor roads" may follow a gridiron, curvilinear, or radial pattern. At Radburn, several additional features of the superblock system, though not essential to its basic idea, are designed to increase its advantages as to safety, privacy, and general avoidance of the nuisance ordinarily accompanying automobile traffic. There, dwellings do not front on the motor roads, but a system of interior parks and walks provides a park and pedestrian entrance on the opposite side of each dwelling from the paved cul-de-sac lane which provides motor access. A modification of the superblock idea used at Greenbelt practically eliminates the culs-de-sac, which are replaced by garage compounds.

The main factors which preserve the character and individuality of planned communities are :

1. The existence of natural or artificial peripheral buffers.
2. The provision for new peripheral barriers as part of the plan either primarily or incidentally as protection.
3. The control of land beyond the periphery.
4. The articulation and stability of the physical plan.

The minimum population required to support any facility will vary inversely with the income of the population :

1. That a community of 1,000 to 1,500 population is the minimum limit for the provision of one church, which would represent physically the importance of religion in this community, and that only where a fairly homogeneous group exists.
2. That 2,000 to 2,500 population is the minimum limit at which a good grade school may be supported either financially or in relation to the number of children in attendance.
3. That 15,000 to 20,000 population is the minimum limit at which adequate hospital facilities may be provided in any form except a clinic.
4. That community facilities in the form of parks, playgrounds, or other open spaces are usually more easily possible for the small separate community than for the larger town.
5. That a community spirit is not dependent upon size but rather upon factors, physical and social, which stress common opportunity and common responsibility.

6. That these factors are of major importance in determining the location of a community.

CENTRALISATION AND DECENTRALISATION OF COMMUNITY FACILITIES.

The important consideration here is to determine which of all the public functions shall be centrally located and which shall be, under the particular circumstances, peripheral or scattered. There are some valid reasons for believing that the placing of business at the centre is not necessarily a desirable location, particularly in the type of communities herein studied.

1. A pressure is created at a point, resulting in intensive use, the introduction of through traffic into the centre and, with the growth of the community, a continued increase in congestion.

2. Such centralisation tends to produce radial thoroughfares, and so to break the community into segments, often too small to have an identity of their own. This frequently creates the necessity of locating community facilities such as schools and playgrounds where they are separated from some of their users by main thoroughfares.

3. If "community" is to be taken in its true sense as a society of persons, it follows that the expression of this concept should be translated into a physical form which will encourage its best realisation. Business alone, as a focal centre, expresses only one side of economic unity.

On the other hand, the following reasons may be suggested for providing a community centre in its literal sense and grouping business at a point on the periphery.

1. The attraction which business exercises is directed outward not inward.

2. Through traffic may then be relegated to the periphery, to the advantage of both the business and the community, leaving the central area accessible without separation by through traffic streets and unified for its proper use for other community activities and for residence.

It is not intended to suggest by this discussion that a central business area is not possible or even desirable, but rather to suggest the possibility of replacing indefinite expansion with "unit" development. Some proportion of business is almost most conveniently central. When a small town can support but one or two stores of a kind, naturally these seek the centre. When a town grows, the stores, of which there are by that time many, may seek scattered location in local sub-centres; but wholesaling, banking, and such activities usually remain centralised.

Town government, as expressed in the "town hall", is usually centralised and remains so in the city of considerable size.

For economic reasons and for convenience, religious activity, in our country of many creeds, is likely to produce scattered churches.

Recreation facilities, since accessibility and not too high intensity of use are desirable, tend to be scattered in relation to tributary districts in the same way as schools, with which they should have close interrelation. The larger recreational units tend to be on the

periphery for obvious reasons of land cost and avoidance of interruption to radial traffic.

The arrangement which might be considered "natural", therefore, would be a centralisation of the provisions for governmental structures, and of such business as is used by all the community or necessarily juxtaposed, together with various other generally used structures according to circumstances and some communally used open space, and the peripheral location of most other services.

The self-sufficiency of trading in a community founded either for industry or for residence has a direct bearing on the provisions of the physical plan. . . . No fixed rule of thumb will apply to every individual case, but a thorough study should be made of the proximity, character, and adequacy of nearby existing business provisions and the type and income of the expected population, and the estimates so evolved checked against available knowledge, of general norms, before the extent of any business area is determined. Too little area may mean monopoly by the shops fortunate enough to locate there, while too much area will react unfavourably in the form of scattered business and costly maintenance of excess public utilities by the community. An immediate over-provision of business frontage can hardly be justified except on the basis of well-founded expectation of reasonably early future growth, and such provision is certainly not justified merely for speculation purposes.

If the area of the tributary region and the optimum population density for that area can be determined, it is possible to fit the business area economically to the need and avoid both too small an area and too large an area. If, however, the ultimate tributary area is unknown, there is no way of avoiding the difficulties mentioned above if the area is to be served by a single business district. The effective way, therefore, to provide for definite expansion (or, for that matter, gradual expansion to a definite limit over a long but indefinite period) is to plan for expansion by units, each unit providing its own facilities of all kinds, excepting only those few which must be single and central in any case, these being found in the last analysis to require only a relatively small percentage of the total area. In this manner, the growth as it comes can carry with it its own facilities. Thus, growth and change are to be accomplished not by the undifferentiated extension of the lot system and adaptation of individual lots to changing uses, but by organised provision of community or neighbourhood units.

SELF-SUFFICIENCY OF COMMUNITY LIFE.

(1) As reported in the study made of Radburn in 1934 for the American Association for Adult Education and published as *Radburn: A Plan of Living*, about 81% of the men and women were found to participate in three or more community activities. Participation in recreational activities, based on 320 men and 366 women, was as follows:

C.S.N.F.

M*

	Percentage of men.	Percentage of women.
Participation in at least one recreational activity	90.3	77.87
Participation in at least two recreational activities	72.5	56.3
Participation in at least three recreational activities	57.18	34.6
Participation in at least four recreational activities	38.75	13.39

(2) Evidence of the comparatively limited extent to which the theatre and moving pictures are attended elsewhere by residents of Radburn, where no such facilities exist, appears in the following quotation from this study :

“ Seventy-five per cent of the Radburn families attend the theatre (as distinguished from the moving pictures) three times or more a year. One-third of these attend as often as six times a year, and one-sixth as often as once a month. Nearly 95% of the theatre-goers go to the theatres in New York City ; 87% of Radburn families go to the moving pictures six times a year or more. Four-fifths of these go at least once a month, half go once every two weeks, and one-third go at least once a week.”

It is worth noting, in connection with community self-sufficiency, that an evident indication of community consciousness, individual to each community, was expressed by the consciousness of the workers (many of whom were talked to casually during the field study) that they were living in a community which was different from the ordinary type of development, that in many ways they were provided with facilities which were better, and that, without analysing it further, they were part of a distinct and well-related unit that had been laid out all as one entity. . . . The physical plan has almost invariably been a major factor in cementing the individual interests of the planned community into one substantial form of better living and self-sufficiency, and that, in turn, this attitude has helped the maintenance of the plan. This belief is borne out by the number of industries which consider that providing this type of community life in its best physical form is purely a matter of good business.

The following definition of the *slum* is based on a general theory of city growth and of the spatial distribution of social functions in the city. It is best summarised by E. W. Burgess : Studies of urban growth reveal that the city grows outward from the central business district in a series of expanding zones. There is a “ zone of transition ” encircling the downtown area. This is the area of deterioration, the so-called slum, created in large part by the invasion of business and light manufacture. A third area is inhabited by workers in industry who have escaped from the area of deterioration

and who desire to live within easy access of their work. Beyond this zone is the residential area of high-class apartment buildings or of exclusive restricted districts of single-family dwellings. Still farther out beyond the city limits is the commuters' zone or suburban areas or satellite cities within a 60-minute ride of the central business district.¹

While various topographical factors may distort this pattern, the principles which underlie it continue to operate even though certain additional factors enter into the situation. Taking this approach as a basis, the slum has been further described as follows :

The slum is a distinctive area of disintegration and disorganisation. It is an area in which encroaching business lends a speculative value to the land. But the rents are low ; for while little business has actually come into the area it is no longer desirable for residential purposes. It is an area of dilapidated dwellings, many of which the owners, waiting to sell the land for commercial purposes, allow to deteriorate, asking just enough in rent to carry the taxes. Except for the sporadic building of factories and business blocks, no building goes on in the slum, and most of its structures have stood for a generation or more.

Aside from a few marooned families, a large part of the native population is transient ; prostitutes, criminals, outlaws, hobos, foreigners who came to make a fortune as we used to go West, and expect to return to the old country as soon as they make their " stake ", who are not really a part of American life and who wish to live in the city as cheaply as possible, live in the lodging-houses of the slum. Here, too, are the areas of immigrant first settlement.

The slum gradually acquires a character distinctly different from that of other areas of the city through a cumulative process of natural selection that is continually going on as the more ambitious and energetic keep moving out and the unadjusted, the dregs and the outlaws accumulate. This is particularly noticeable in the more static European cities. In America where competition is uncontrolled this selective process lends the slum a submerged aspect. The city, as it grows, creates about its central business district a belt of bleak, barren, soot-begrimed, physically deteriorated neighbourhoods. And in these neighbourhoods, the undesirable and those of low economic status are segregated by the unremitting competition of the economic process in which land values and rentals and wages are fixed.²

Harmonious *neighbourhood development*, as an important factor in stable investment, has been officially recognised by the Federal Housing Administration under title II of the National Housing Act. Applicants for mortgage insurance are informed that neighbourhoods which are attractively planned, harmoniously developed, and protected by well-drawn and strictly enforced zoning regulations and proper deed restrictions will receive the most favourable con-

¹ E. W. Burgess, " Can Neighbourhood Work have a Scientific Basis ? " in R. E. Park, E. W. Burgess, and R. D. McKenzie, *The City* (Chicago, 1925).

² Harvey W. Zorbaugh, *The Gold Coast and the Slum : A Sociological Study of Chicago's Near North Side* (Chicago, 1929).

AVERAGE SPACE REQUIREMENTS OF AMERICAN CITIES

Use.	Net acres per 100 persons.	Percentage of developed area.
Residence	3.0	40
Commercial	0.2	3
Industrial	0.5	7
Railroad property	0.4	4
Streets	2.7	30
Parks and playgrounds	0.6	6
Other public uses	0.5	6
Semi-public uses	0.3	4
Total	8.2	100

sideration. Assuming that the qualities which produce a satisfactory social condition also tend to assure economic soundness, the Federal Housing Administration has focused the attention of lenders and builders on avoidance of environmental conditions that exercise, in considerable degree, those disintegrating influences which are as certain to destroy property values as defects in the buildings themselves.

The growth of the city created the need for replacing the lost social unity of the small village. A significant attempt was made in 1907 in Rochester, N.Y., in the movement under the leadership of Edward J. Ward, to establish the school as a neighbourhood centre. Mr. Ward characterised the idea as "the restoration to its true place in social life of that most American of all institutions, the public school centre, in order that through this extended use of the school building might be developed, in the midst of our own complex life, the community interest, the neighbourly spirit, the democracy that we knew before we came to the city".

The neighbourhood unit has been described as a satellite form of development either within or outside the town itself.

The advantages claimed for planned neighbourhood units are:

1. Safety from automobile traffic and relief from waste due to traffic congestion.
2. Civic benefits resulting from natural growth of social movements through ease of communication among residents.
3. Municipal economies through savings in street area and preservation of the best and most stable use of publicly provided schools, playgrounds, utilities, etc.
4. Stability of property values due to greater control over disintegration and encouragement of beneficial elements.
5. Provision of recreation space at minimum cost to city or developer through saving in street area.

Application of the neighbourhood unit idea to subdivision planning is mainly a matter of education. When developers have learned of the advantages of this system through examples of successfully

planned neighbourhoods, they will soon begin to apply its valuable principles to their plans. The accent placed upon investment rather than speculative returns from housing developments will undoubtedly result in increased consideration of long-term values. This means economy through large-scale planning, protection of neighbourhood services, and protection from inharmonious influences through rigid restrictions, all serving to create a stable neighbourhood population and continuing economic advantage.

Unless our State and municipal governments have the foresight and the courage to adopt *rational urban land policies*, the alternative might conceivably be a growing demand for the *complete* restoration to the people, as a present rather than an ultimate reality, of the land-ownership which, in the Constitutions of the States of Wisconsin and South Carolina, for example, is guaranteed to them in the clause which declares that :

The people of this State, in their right of sovereignty, are deemed to possess the original and ultimate property in and to all lands within the jurisdiction of the State.

Those who advocate that American municipalities gradually acquire by constitutional means their entire underlying land offer in support of their recommendations such facts or assumptions as the following :

1. The land and the sea and the sky were created or evolved before man. When man finally came, he found them awaiting his use. He had no part in their creation, yet they are necessary to his existence. Without land, a man has no place to set his foot. Thus we see the danger inherent in the private ownership of land. Those in whom land-titles are vested can exclude their fellow humans from the earth if they so desire ; the others cannot even *build* a place to stand on. Therefore, there can be no inherent right to exclusive ownership ; the land is the natural heritage of society, and every human being has a right to live upon it.

2. For a great many years valuable land has been largely monopolised. Ever since the disappearance of the frontier we have watched the growth of a propertyless class living at the mercy of landowners. Wealth increases with scientific advance, but the holders of title to the surface of the earth are able, without rendering commensurate service, to deprive the great masses of mankind of their proportionate share of the fruits of their productivity. This is not pure theory. If one follows the history of wages in all countries, he will see that average wages, in proportion to the total national income, start downward simultaneously with the disappearance of the frontier. As soon as access to the land is denied, there is no choice for most men but to sell their labour to others for what they can get.

3. It is the duty of the State to protect the freedom and security of its citizens, and political freedom is empty without economic freedom. Private ownership of land has ceased to fulfil the purpose it once had of providing maximum economic security for all. Now the minority only is secure.

4. Urban ground rents, if not collected by the community that

creates them, are certain to be collected by landowners who do not create them.

5. Forward-looking municipalities the world over are recognising the need for increased land in public ownership, for recreation, low-rent housing, school sites, and other purposes, and are making plans for adding to their landholdings within, and sometimes beyond, their corporate limits.

6. Public administration of land would involve no insuperable difficulties. It is primarily a legal and fiscal problem. Public interest would be paramount, and contrary to the contentions of some, a great amount of corruption would be eliminated from government. Instead of speculative landowners absorbing much of the benefit of population growth and public expenditures, the returns on public improvements could be used to pay their cost or be put into more public improvements, with only the best interest of the community in mind.

7. If any city had owned, and retained from its inception, title to its entire site, that city would have been planned more scientifically, developed more rationally, and be less burdened with taxes than the ordinary city of to-day.

8. Ownership of both site and building is not essential to the development of land for business or residential purposes. Witness the extensive use of the leasehold system in many cities, the rents accruing, however, to private owners rather than to the communities that have created them.

9. Our present system of land tenure encourages the use in many cases of the less desirable land in a city, or of land outside the city's limits, while much desirable land within the city is held vacant or poorly improved for possible speculative gain.

10. Assuming the public interest to demand the retention, under proper controls, of our capitalistic system, there must be recognition of the fact that land-gambling is a parasitic trade, and rejection of the too common assumption that mere land speculators and jerry-builders should be permitted to rank with high-grade realtors, manufacturers, merchants, and bankers, as members of the local business community.

If *zoning* is to effect industrial decentralisation in large cities and metropolitan areas, special care must be taken in restricting the size of industrial zones. Industrial zones should, of course, be made sufficiently large in the aggregate to care for every reasonable demand for future expansion and growth, but too large industrial zones may very readily become the means of a considerable amount of congestion to both population and industry. Many cities would do well to review the size and arrangement of their industrial zones in light of their probable effect upon the prospective population pattern of the community.

APPENDIX B

COMPONENTS OF TYPICAL TOWNS WHICH ARE FAIRLY ISOLATED AND NOT PART OF A GREAT URBAN AGGLOMERATION

I. A TYPICAL TOWN OF ABOUT 20,000 INHABITANTS

1.	Population		19,535 (in 1931)
2.	Sex and age composition of population	Males	9,461
		Females	10,074
		Male.	Female.
	Age 0-14	2,296	2,299
	Age 15-19	815	854
	Over 20	6,350	6,921
3.	Number of families		5,152 (Private)
4.	Total number of population employed in industry	—	
5.	Total number of population employed in local services (Municipal, transport, commercial, etc.)	—	
6.	Existing industries, the nature of each and the number of employees in each (distinguishing between male and female)	—	
7.	Local services, the nature of each and the number of employees in each (distinguishing between male and female)	—	
8.	Number of houses		5,648
9.	Number of flats		60
10.	Number of churches	Church of England	3
		Roman Catholic	1
		Nonconformist	7
		Total	11
11.	Number of schools	(a) Elementary	12
		(b) Secondary 2 and 1 Technical College	1
12.	Number of public libraries		1
13.	Number of public swimming baths		1
14.	Seating accommodation of cinemas		3,449 in three cinemas
15.	Area of public open space		62.5 acres
16.	Number of allotments		3—total area 18½ acres
17.	Number of shops		499

ESTIMATED NUMBERS OF INSURED MALES AND FEMALES, AGED 14-64,
IN THE PRINCIPAL INDUSTRIES IN JULY, 1939

(Note: The figures are based on the numbers of un-employment books exchanged in July, 1939, and include persons unemployed at the time of the annual exchange as well as those actually at work.)

Industry.	Males.	Females.	Remarks.
General engineering, etc.	4,040	1,030	Chiefly concerned in the manufacture of ball and roller bearings, steam boilers, agricultural implements and disintegrators.
Farming, forestry, etc.	1,090	40	
Building	590	—	
Drink industries	570	10	Two breweries.
Mining and quarrying	390	10	Chiefly the mining, by surface working, of gypsum,—the overburden being clay is manufactured into bricks.
Food industries	200	40	
Local Government service	190	30	
Goods transport by road	120	—	
Construction and repair of motor vehicles, cycles and aircraft	140	10	
Chemicals	110	20	
Public works contracting, etc.	110	—	
Tailoring	60	280	
Hosiery	60	100	
Dressmaking and millinery	20	280	
All other industries and services	1,670	820	
Total	9,360	2,670	

II. A TYPICAL TOWN OF ABOUT 50,000
 INHABITANTS

Year	1921	1931	1936		1939	
Acreage	11,321	11,321	12,011		12,011	
Population	43,383	48,697	49,131		52,500	
Ditto Composite of age.			Male.	Female.	Male. (approx.)	Female. (approx.)
0-4 yrs. . . .	—	—	1,671	1,735	1,786	1,856
5-14 „	—	—	3,531	3,369	3,776	3,600
15-19 „	—	—	2,510	1,960	2,680	2,086
20-29 „	—	—	5,325	4,320	5,700	4,620
30-64 „	—	—	9,542	11,056	10,200	11,800
65-84 „	—	—	1,645	2,299	1,760	2,456
85 and over	—	—	50	118	54	126
Total	—	—	24,274	24,857	25,956	26,544
Number of persons per acre	3.83	4.3	4.09		4.36	
Number of Wards in Borough	Four	Four	Four		Nine	
Number of Private Families (2 per- sons and over)	—	11,071	11,193		—	
Population in Priv- ate Families	—	39,903	40,333		—	
Number of Houses	9,264	10,520	12,272		13,106	
Number of Struc- turally separate dwellings occu- pied			10,640			
Ditto unoccupied			289			
Rooms occupied			58,824			

YEAR 1939

	Male.	Female.	Total.
Total number of population employed in industry	14,485	4,485	18,970
Number of persons employed in the following main industries :			
Building	1,597	8	1,605
General engineering	1,119	24	1,143
Electrical	209	74	383
Clothing manufacture	169	676	845
Distribution trades	2,268	1,050	3,318
Government, Services	817	57	874
Local services	1,374	327	1,701
Mental hospitals	365	351	716
Laundries	74	260	334
Printing	500	271	771
	8,492	3,098	11,690

YEAR 1939

	Male.	Female.	Total.
Total number of persons employed in <i>Local Services</i> comprised as follows :			
L. & N.E. Rly.	125	72	197
Gas Co.	174	4	178
Eastern National Bus Co.	165	4	169
Municipal—			
Transport Dept.	117	4	121
Electricity Dept.	142	3	145
Education	70	145	215
Highways Dept.	215	—	215
Water Dept.	31	—	31
Harbour	10	—	10
Sewage works	12	—	12
Cemetery	11	—	11
Lighting Dept.	22	—	22
Housing Dept.	18	—	18
Police	55	3	58
Parks	27	—	27
I.D. Hospital	7	36	43
Public lavatories	9	8	17
Maternity Home	1	14	15
Administrative, technical and clerical staffs for the above, i.e. Town Clerk, Borough Engineer, Medical Officer of Health, Borough Treasurer, Police, etc.	163	34	197
Total	1,374	327	1,701

TYPICAL TOWNS

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	Number.
Houses	13,106 (1,242 owned by Council)
Flats	24
Churches	22
Other places of worship	13

	Elementary.	Secondary.	Private.
Schools	19 (28 Depts.)	3	4

	Number.
Public libraries	1
Hospitals (excluding military)	2 (one General County one Infirmary).
I.D. Hospital	1
Maternity Home	1
Workhouse	1
Shops	823
Public houses	105
Residential hotels	10
Fire Station	1
Railway stations	3
Municipal car parks	3
Bus parks	1
Cemeteries	1
Public Swimming Baths	1
Cinemas	5
Seating accommodation of cinemas	4,585
Private nursing homes	2
Mental institutions	5

Allotments.	Owned by the Council.		Leased by Council.	Private allotments.	Area reserved for allotments in T.P. Scheme.
	for allotments.	for other purposes, but used for allotments.			
Number of allotments	812	161	614	400	
Total area in acres .	64	15.5	49	69	60 acres

YEAR 1939

<i>Public Open Spaces.</i>	
Area of existing public playing fields	108 acres
Area of existing public open spaces (parks)	38 "
Area of land owned by Council for public open spaces but not laid out	94 "
Area of land proposed in T.P. Scheme for public open space	43 "
Area of existing private playing fields and open spaces	70 "

Aerodrome.

Area reserved in T.P. Scheme for Class A Municipal Aerodrome. (The larger portion of this has been acquired by the Council but not laid out viz : 203 acres.)

Water.

Excellent and plentiful supply obtainable from underlying chalk obtained from three boreholes each yielding 1,000,000 gallons per day and obtained from springs yielding 600,000 gallons per day; for average daily consumption of 36 gallons per day per person.

Sewage Disposal.

New Sewage Disposal Works have been constructed designed to treat D.W.F. 2,000,000 gallons per day and maximum rate of 12,000,000 galls per day partially. Sludge is treated on the digestion principal. The Methane gas produced provides the necessary fuel for driving the pumping engines, generating electricity and heatings.

By-pass Road.

Constitutes part of the London- Trunk Road.

Refuse Disposal.

Refuse Disposal is now carried out by Control tipping, but we have prepared a Scheme for sorting, screening and composting the residue with digested sludge on the "Savital" system. This proposed scheme has not been before the Council yet and presumably there will be difficulties during the war period in carrying it out and possibly the Ministry of Health would not approve such a scheme at the present time.

Street Lighting.

	Number.	
Electric-tungsten lamp	. 912	various wattages.
Electric-sodium lamp.	. 237	various wattages.
Electric-mercury lamp	. 13	various wattages.
Incandescent gas lamp	. 615	

Just prior to the war several roads were lighted by sodium lamps in accordance with recommendations laid down by the Departmental Committee of Ministry of Transport in their final report dated 1937.

III. A TYPICAL TOWN OF ABOUT 100,000 INHABITANTS

1. Population	103,700
2. Sex and age composition of population	See Statistical Tables attached
3. Number of families	ditto
4. Total number of population employed in industry	ditto
5. Total number of population employed in local services (municipal, transport, commercial, etc.)	ditto
6. Existing industries, the nature of each, and the number of employees (distinguishing between male and female) in each	ditto
7. Local services, the nature of each and the number of employees (distinguishing between male and female) in each	ditto
8. Number of houses	27,800
9. Number of flats	362 (Corporation)
10. Number of churches	See list attached
11. Number of schools	ditto
(a) elementary	
(b) secondary	
12. Number of public libraries	5
13. Number of public swimming baths	3
14. Seating accommodation of cinemas	See list attached
15. Area of public open space	427—0—19p.
16. Number of allotments	2,300 (Corporation)
17. Number of shops	1,775, houses and shops 584, Lock-up shops

STATISTICAL TABLES

TABLE 1. CENSUS POPULATIONS, 1801-1931

Date of Census.	Enumerated population.	Intercensal increase.
1801. March 9/10	7,020	—
1811. May 26/27	8,427	1,407
1821. May 27/28	10,793	2,366
1831. May 29/30	15,349	4,556
1841. June 6/7	21,242	5,893
1851. March 30/31	26,657	5,415
1861. April 7/8	32,813	6,156
1871. April 2/3	41,168	8,355
1881. April 3/4	51,881	10,713
1891. April 5/6	61,012	9,131
1901. March 31/April 1	87,021	26,009
1911. April 2/3	90,064	3,043
1921. June 19/20	90,895	831
1931. April 26/27	92,341	1,446

TABLE 2. CENSUS STATISTICS RELATING TO MUNICIPAL WARDS, 1931

Wards (as existing before Extension).	Population 1931.			Compared with 1921.	Area in acres.	Persons per acre.	Separate Dwellings Occupied.	Persons per Room.
	Males.	Females.	Total.					
A.	2,846	3,415	6,261	- 127	298	21.0	1,764	0.59
C.	4,218	4,235	8,453	-1,509	145	58.3	1,939	0.84
D.	3,559	3,709	7,268	+2,017	382	19.0	1,746	0.77
K.	5,096	6,002	11,098	+5,042	454	24.4	3,013	0.67
K.	4,445	4,934	9,379	+2,307	584	16.1	2,410	0.75
N.	4,060	4,073	8,133	-1,291	99	82.2	1,913	0.74
St. C.	2,828	3,107	5,935	-1,448	79	75.1	1,513	0.67
St. E.	2,759	3,214	5,973	- 877	98	60.9	1,633	0.64
St. J.	4,681	4,943	9,624	+ 411	398	24.2	2,373	0.72
St. L.	3,013	3,577	6,590	- 736	277	23.8	1,672	0.69
St. M.	3,366	3,978	7,344	-1,254	103	71.3	1,924	0.61
S.	2,874	3,409	6,283	-1,029	552	11.4	1,241	0.77
County Borough .	43,745	48,596	92,341	+1,446	3,469	26.6	23,141	0.70

TYPICAL TOWNS

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TABLE 3. CENSUS STATISTICS RELATING TO AGE AND SEX AND MARITAL CONDITIONS, 1931

Quinquennial age groups.	Numbers.			Percentages. ¹		
	Males.	Females.	Total.	Males.	Females.	Total.
0-4	2,859	2,921	5,780	6.5	6.0	6.3
5-9	3,516	3,523	7,039	8.0	7.3	7.6
10-14	3,568	3,253	6,821	8.2	6.7	7.4
15-19	3,704	4,009	7,713	8.5	8.3	8.4
20-24	3,671	4,197	7,868	8.4	8.6	8.5
25-29	3,639	3,953	7,592	8.3	8.1	8.2
30-34	3,416	3,940	7,356	7.8	8.1	8.0
35-39	3,174	3,824	6,998	7.3	7.9	7.6
40-44	2,995	3,515	6,510	6.9	7.2	7.0
45-49	2,812	3,300	6,112	6.4	6.8	6.6
50-54	2,666	3,049	5,715	6.1	6.3	6.2
55-59	2,465	2,667	5,132	5.6	5.5	5.6
60-64	1,937	2,148	4,085	4.4	4.4	4.4
65-69	1,480	1,676	3,156	3.4	3.4	3.4
70-74	970	1,276	2,246	2.2	2.6	2.4
75-79	562	788	1,350	1.3	1.6	1.5
80-84	225	393	618	0.5	0.8	0.7
85-89	76	125	201	0.2	0.3	0.2
90-94	9	37	46	0.0	0.1	0.0
95 and over	1	2	3	0.0	0.0	0.0
All ages	43,745	48,596	92,341	100.0	100.0	100.0
Marital conditions:						
Single	20,825	23,018	43,843	47.6	47.4	47.5
Married	21,064	21,186	42,250	48.1	43.6	45.7
Widowed	1,820	4,354	6,174	4.2	8.9	6.7
Divorced	36	38	74	0.1	0.1	0.1

¹ Sex percentages—Males 47.4; Females 52.6.

TABLE 4. CENSUS, 1931. AGE AND CONDITION DISTRIBUTION,
COMPARED WITH FIGURES FOR 1921

Sex and Census year.	Age distribution per 1,000 of each sex.				Marital condition per 1,000 of each sex.		
	0-4.	5-19.	20-39.	40-	Single.	Married.	Widowed and Divorced.
<i>Males :</i>							
1931	65	247	318	370	476	482	42
1921	86	270	309	335	511	448	41
<i>Females :</i>							
1931	60	222	327	391	474	436	90
1921	70	256	341	333	512	405	83

TABLE 5. DATA FROM 1931 CENSUS VOLUME, COMPARED WITH
FIGURES FOR 1921

	1931.	1921.
(a) Enumerated population	92,341	90,895
(b) Intercensal increase	1,446	831
(c) Rate of increase per cent.	1.6	0.9
(d) Number of males	43,745	42,871
(e) Number of females	48,596	48,024
(f) Number of females per 1,000 males	1,111	1,120
(g) Average age of males (years)	33.4	31.1
(h) Average age of females (years)	34.7	31.9
(i) Persons per acre	26.6	26.2
(j) Parliamentary electors	62,577	44,306
(k) Private families	24,966	21,979
(l) Separate dwellings occupied	23,141	19,893
(m) Excess of families over private dwellings occupied	1,825	2,086
(n) Population in private families	89,139	88,179
(o) Percentage of population in private families	96.6	97.0
(p) Rooms occupied by private families	127,222	112,410
(q) Average number of persons per room	0.70	0.78
(r) Average size of occupied dwelling (rooms)	5.50	5.65
(s) Average family occupation (rooms)	5.10	5.11
(t) Families per occupied dwelling	1.08	1.10
(u) Average size of Private family (persons)	3.57	4.01
(v) Population in private families living more than two-per-room density	1,784	2,393
(w) Percentage of population in (v)	2.00	2.71
(x) Dwellings occupied by one private family	21,395	17,891
(y) Dwellings occupied by two private families	1,686	1,925
(z) Dwellings occupied by three or more private families	60	77

TABLE 6. CHANGES IN AREAS BY EXTENSIONS OF BOROUGH ON 1ST APRIL, 1932

Areas diminished.	Acreage (land and inland water).	Census populations.	
		1921.	1931.
B.R.D.	606	130	220
Part of B.C.P.			(59)
Part of M.C.P.			(161)
H.R.D.	202	5	3
Part of H.C.P.			(3)
N.R.D.	1,924	983	3,982
Part of D.C.P.			(293)
Part of D.C.P.			(324)
Part of W.C.P.			(3,365)
Added to N.C.B.	2,732	1,118	4,205

TABLE 7. SEX AND AGE DISTRIBUTION OF POPULATION AT CENSUS, 1931, IN AREA TRANSFERRED TO THE BOROUGH ON 1ST APRIL, 1932

Quinquennial age-groups.	Males.	Females.	Total.
0-4	224	203	427
5-9	250	235	485
10-14	196	175	371
15-19	148	212	360
20-24	123	208	331
25-29	159	210	369
30-34	204	227	431
35-39	177	198	375
40-44	127	148	275
45-49	116	108	224
50-54	77	107	184
55-59	67	63	130
60-64	49	42	91
65-69	35	38	73
70-74	21	19	40
75-79	8	16	24
80-84	4	3	7
85 and over	3	5	8
All ages	1,988	2,217	4,205

TABLE 8. CLASSIFICATION OF THE CHIEF INDUSTRIES IN WHICH PERSONS ENUMERATED IN THE BOROUGH WERE ENGAGED IN 1931, COMPARED WITH 1921¹

Chief Industries.	1931.		1931.	1921.
	Males.	Females.	Totals.	Totals.
Farming and market gardening	250	5	255	245
Other gardening	154	14	168	152
Manufacture of blue and polishes	51	40	91	154
Iron and steel foundries	237	3	240	339
Engineering (not marine or electrical)	658	57	715	1,053
Electrical installations, cables and apparatus	104	52	156	118
Construction and repair of vehicles	676	94	770	1,426
Other metal industries	97	8	105	191
Fellmongery, tanning and leather dressing	792	192	984	939
Manufacture of saddlery, harness bags, trunks and other leather goods	80	72	152	206
Tailoring	197	321	518	545
Manufacture of boots, shoes and slippers (not rubber)	8,864	5,876	14,740	17,386
Manufacture of clogs	25	9	34	
Manufacture of other clothing (not knitted)	64	971	1,035	1,315
Manufacture of food	526	120	646	548
Manufacture of drink	529	55	584	765
Wood working and basket ware	274	25	299	483
Dealing in timber	157	10	167	
Cabinet and furniture making, shop fitting, etc.	399	35	434	253
Manufacture of cardboard boxes, paper bags and stationery	51	192	243	352
Printing, bookbinding and photography	636	321	957	897
Building and contracting	1,875	25	1,900	2,469
Other manufacturing industries	206	53	259	135
Gas, water and electricity	757	26	783	639
Railway transport	1,106	19	1,125	1,297
Road transport	714	22	736	422
Dealing in coal	184	14	198	146

¹ The information in this Table has been extracted from the Industry Tables prepared by the Registrar-General in connection with the Censuses of 1921 and 1931. The figures in 1921 refer to persons 12 years of age and over and in 1931 to persons 14 years and over. The statistics for the boot and shoe industry include clog-makers in 1921 but not in 1931. Persons out of work in 1921 were not tabulated separately. All the classifications relate to the industries of persons enumerated in N., but the businesses were not necessarily situated within the borough.

Chief Industries.	1931.		1931.	1921.
	Males.	Females.	Totals.	Totals.
Dealing in sugar confectionery	58	85	143	96
Dealing in tea, coffee, grocery and provisions	493	164	657	574
Dealing in milk and dairy products	224	32	256	198
Dealing in meat	429	35	464	351
Dealing in fish and poultry	142	13	155	119
Dealing in vegetables and fruit	156	68	224	171
Dealing in Tobacco	48	42	90	77
Dealing in drugs and druggists sundries	108	42	150	125
Dealing in metals, metal goods and tools	169	34	203	226
Dealing in Textiles and clothing, drapery, hosiery, etc.	337	543	880	1,024
Dealing in boots and shoes	131	92	223	146
Dealing in skins, leather and leather goods	251	74	325	308
Dealing in furniture	189	47	236	210
Publishing, dealing in paper, stationery, newspapers, books	137	84	221	195
General and export trading and non-textile packing	92	22	114	118
Departmental stores, general shops and like mixed business	375	135	510	373
Other and undefined dealings	278	253	531	262
Banking and bill discounting houses	92	25	117	113
Insurance	273	64	337	221
Other commerce and finance	145	24	169	148
Defence	282	5	287	547
Central civil government	334	93	427	
Local government	1,721	421	2,142	1,493
Professions	742	733	1,475	1,256
Entertainments and sports	267	122	389	225
Private domestic service	168	1,772	1,940	1,500
Lodging and boarding-houses	18	107	125	935
Restaurants, hotels, public-houses, clubs	426	372	798	
Laundries, dyeing, and dry-cleaning	56	173	229	172
Hairdressing, manicure and chiropody	121	90	211	120
Other personal service	120	55	175	76
Other industries or industry not stated	80	14	94	13
Total population—all ages	43,745	48,596	92,341	90,895
Under 14 years of age in 1931. (Under 12 in 1921)	9,239	9,012	18,251	17,738

Chief Industries.	1931.		1931.	1921.
	Males.	Females.	Totals.	Totals.
Aged 14 years and over in 1931. (12 and over in 1921)	34,506	39,584	74,090	73,157
Unoccupied and retired	2,724	24,029	26,753	28,307
Out of work (excluded from industry classification)	2,908	903	3,811	
Total of industries (excluding persons out of work)	28,874	14,652	43,526	
Persons aged 14 years and over in 1931 (12 and over in 1921) engaged in the manufacture of boots, shoes and slippers (not rubber)—excluding persons out of work :				
England and Wales	131,839	52,895	184,734	198,267
N.	8,864	5,876	14,740	17,386
N. figures expressed as a per- centage of England and Wales	6.7	11.1	8.0	8.8

CHURCHES

Church of England.	Roman Catholic.	Free Churches.			Unitarian.
		Baptist.	Methodist.	Congrega- tional.	
19	3	11	14	6	1

Various others including: Jewish Synagogue, Salvation Army and Spiritualist Churches, etc.

SEATING ACCOMMODATION IN CINEMAS

Savoy	1954	Regal	799
Exchange	1920	Temperance	634
Ritz	828	Roxy	500
Tivoli	853	Coliseum	675
Plaza	595	New Theatre	1,513
Picturedrome	628	Repertory Theatre	752
Cinema de-Luxe	940		

NUMBER OF SCHOOLS

(a) 20 Provided. 8 Non-Provided. (Including Open Air School and Nursery Schools).

(b) Technical College; School for Girls; School of Art; Town and County School. N. School for Girls, E. College, Convent, etc.

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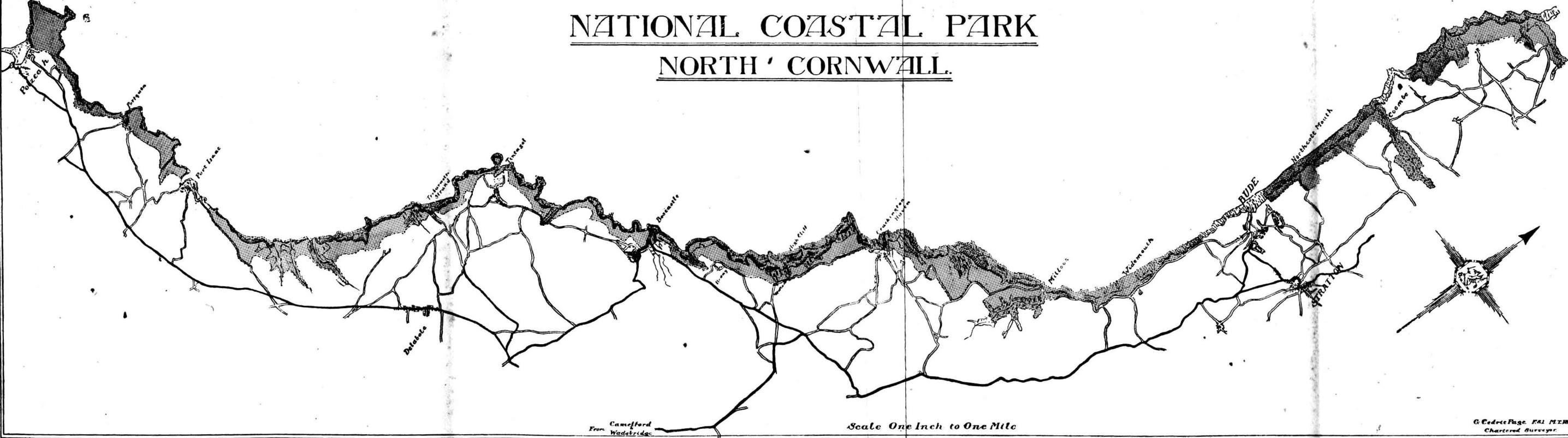
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