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Regional Planning in Great Britain

—Focus on the Transfer and Transformation of the Garden City Concept—

Etsuo Yamamura

Department of Regional Planning, Division of Environmental Planning, Graduate School of Environmental Science, Hokkaido University, Sapporo, 060

イギリスの地域計画

——田園都市理論の受容と変容を中心として——

山村悦夫

北海道大学大学院環境科学研究科地域計画学講座

1. Introduction

The origin of regional planning in Great Britain was initiated by New Town Planning, formulated as a distribution policy against the over-population problems of large cities in the post-Industrial Revolution period. Later, it was not only confined to urban redevelopment in the reorganization of overpopulated regions, but was extended to a national scale to encompass wider issues.

In this paper, the Garden City concept will be introduced after which the New Town development methods policies will be described. Following this will be the methods of transfer of these concepts into the regional planning and city planning of Japan, and the transformation that may have occurred in the process. Finally, "Urban Complex formed by Linkages of Middle and Small Towns", a planning theory conceived as a theory of planning in regional planning in Japan will be dealt with.

2. Howard's Garden City[1)]

Ebenezer Howard's Graden City concept, was realized in the construction of Letchworth and Welwyn Garden Cities and since then, the idea has spread all over the world. Consequently, in 1899, the Garden City Association (later the International Housing and Urban Planning Association) was established in which Howard became President and achieved fame all over the world.

In Japan, too, the influence is widespread. In 1907, a book named "Denentoshi"

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(Garden City) was completed by the Local Bureau of the Home Ministry. In 1918, the Denentoshi Kabushiki Kaisha (Garden City Joint-Stock Company) which develloped Denentoshi City was established. These movements represent the beginnings of regional planning and city planning in Japan.

The seeds of thought that led to Howard's Garden City concept has been said to have originated from Thomas More's "Utopia" (1516).[2] In this book, More shows an ideal image of a charming city, liberal in its internal design and is located in the countryside on a limited scale. The realization of the ideals of Howard's Garden City concept have since then been achieved on a substantial scale.

In 1898, when Howard's ideals were published in 'Tomorrow: A Peaceful Path to Reform",[3] he was as yet still unknown. However, these ideals were to spread with activities of the Garden City Association under his leader-ship.

In his ideals, Howard stress the fact that there is not only a limited choice between either a city life or a country life, but the existence of another alternative. And that is one which perfectly embraces the advantages of the dynamic activeness of city life and the beauty of nature of the countryside. Having examined the vices and virtues of both city and country life, he sought and extracted the virtues that centre upon the contributions of a human society and nature's beauty. He was confident in his ability to blend them together for the mutual coexistence of city and country. And out of this joyous union will spring a new hope, a new life, a new civilization.

In the Garden City, too, not only will opportunities for social interaction be multiplied, but nature's beauty will embrace the inhabitants, high wages and employment opportunities will be guaranteed, a desirable healthy environment ensured, beautiful parks and houses constructed, and the highest level of human freedom, harmony and cooperation will be achieved. Howard also describes the concrete aspects of design of the Garden City.

As shown in Fig. 1, the Garden City is constructed more or less centrally on a 6,000 acre site, covering an area of 1,000 acres with a 3/4 mile radius. Six magnificent boulevards —each 120 feet wide— traverse the city from centre to circumference, dividing it into six equal parts or wards. In the centre is a circular space containing about five and a half acres, laid out as a beautiful and well-watered garden, and surrounding this garden, each standing in its own ample grounds are the large public buildings — town hall, principal concert and lecture hall, theatre, library, museum, picture-gallery and hospital. Running all around the Central Park is a wide glass arcade called the "Crystal Palace", opening on to the park. Houses are usually built in concentric rings, facing the various avenues. In this city will dwell 30,000 people with 2,000 in the agricultural estate.

Leaving the town centre is a 420 feet wide "Grand Avenue", a 3 mile length of green belt and this divides that part of the town which lies outside the Central Park into two belts. In this avenue is occupied public schools, playgrounds, gradens and the church. On the outer ring of the town are factories, warehouses, dairies, markets, etc. all facing a circle railway, which encompasses the whole town. The

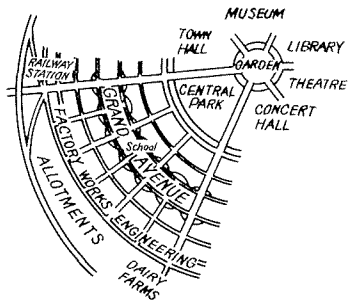

Fig. 1. Ward and Centre of Garden City.

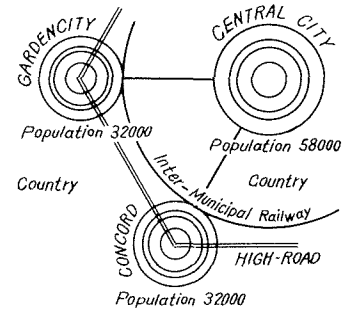

Fig. 2. Principle of City Growth.

purpose of the encircling green belt is to avoid the uncontrolled sprawl of the city and to bring the inhabitants closer to the agricultural belt, thus introducing the country feelings into the city.

With regards to the finance of the Garden City, all revenue would be derived from the publicly-owned rents, and agricultural land would also have to meet fair rent. By this way, it would not be possible for a tenant to secure for himself the rise in land value resulting from development. Consequently, the development profits from the rise in land value originating from social activities will not be profited by individual landlords as the land will be administered and managed publicly.

The expenditure will mainly consist of repayment of land income and rents, land development costs, and the cost of construction of public facilities.

In administration and management, the necessary funds are derived through the operation of debentures made from mortgages of profitable land. The ownership of developed land will be retained by semi-private companies or regional society representative groups and will be leased out to private developers. Profits from lease of land will be ploughed back for the repayment of loans, dividends of debenture redemption funds as well as the necessary public facilities as roads, schools, parks and administrative needs.

In 1919, a short definition was adopted for Garden City by the Garden City Association :

> "A Garden City is a Town designed for the healthy living and industry ; of a size that makes possible a full measure of social life, but not larger ; surrounded by a rural belt ; the whole of the land being in public ownership or held in trust for the community" (Howard, E : Garden Cities of Tomorrow, 1944)

Another aspect which demands strict attention is his comment on Social Cities.

> "...but the inhabitants of the one could reach the other in a very few minutes ; for rapid transits would be specially provided for, and thus the people of the two towns would in reality represent one community. ...But (a cluster of cities) so grouped around a central city that each inhabitant of the whole group,

though in one sense living in a town of small size, would in reality be living in, and would enjoy the advantages of a great and most beautiful city"

As shown in Fig. 2, the Garden City is not conceived as a single city, but through the objectives of a regional scale planning, the ideal of connecting several garden cities to create a community will be realized. However, as pointed out by Louis Mumford[4], Howard did not pay much attention to this aspect but rather devoted his concentration to the building of the garden city itself.
An important step in the realization of the garden city concept was the establishment of the Garden City Construction Company and the Letchworth Garden City Ltd. in 1903.

The site chosen for the garden city was 35 miles from London, an existing small town located between Hitchin and Badlock with an area of 3,800 acres and a population of 40,000 was planned. In 1919, the Garden City estate became independently separated from Hitchin. It was enumerated as an Urban District and came to be called the Letchworth Urban District.

The second experimental city was Welwyn Garden City. In the same manner as Letchworth, it was started in 1919 on a site 25 mile site from London. However, with the enforcement of the New Towns Act in 1946, the Welwyn Garden City Company was dissolved, and the property was handed over to the New Town Development Corporation. The reason behind this was that as this city was part of the comprehensive Greater London Plan, the two policies of solution of overcrowdedness in London and population distribution could be managed by the New Town Development Corporation, charged with the capacity for efficient interdepartmental regulation.

3. Regional Policy in Britain[5]

The history of Britain's regional policy can be divided into two periods — first, the pre-war and initial post-war period where regional and urban policies were thoroughly examined by the Barlow Commission, and secondly, the period after 1960 when the new towns spread widely and the 11 new planning regions were designated.

3.1 Regional Planning in the Pre-war and Initial Post-war Period

In spite of the spread of the understanding of the garden city through the construction of the two experimental cities of Letchworth and Welwyn with the initiative of Howard and the Garden City Association, it was still not accepted as a government policy.

One of the reasons for this delayed infiltration was the spread of the automobile which resulted in the prosperity of suburban development. With this came the rush for suburban housing and large-scale developments took place in the suburbs. Private contractors propagated this as the Garden City and the ideals of the Garden City were smothered under this suburban development.

Again, after the World War II, by the Housing and Town Planning Act of 1919, a housing assistance scheme was introduced, and public housing estates were constructed on a national scale. This suburban development, due to deficiencies in the urban planning system brought about a sprawl phenomenon. Furthermore, workers moved into houses left vacantin middle class occupants who moved to the suburbs causing greater congestion in these urban houses, thus further deepened deterioration of the urban environment. Lack of essential social facilities and insufficiency of employment opportunities triggered a commutation rush, and the limits and malice of this form of development were made explicit. The increasing concentration in large cities continued at the expense of a serious depopulation phenomenon in the outmigrating regions. An effective design of regional planning policy was therefore called for in the elimination of such affects.

The subject under consideration was "to clarify the factors responsible for bringing about the present distribution of industry and population in Britain, and with the prediction of the course to be followed, to study the issues brought about by population and industrial concentration in large cities or specific regions, so as to propose corrective measures for that region". Based on this, a survey on the regional planning system and urban planning system was carried out and a report was presented in 1940.

In this report, dense regions and underdeveloped regions were viewed as two facets to the same problem. Under the fundamental recognition that the vices of metropolitan concentration extinguish all social benefits, the following proposals were forwarded : —

(1) That national action was required to influence the distribution of industry and population and that a Central Authority should be set up for this purpose.
(2) The objectives were to redevelop the congested urban areas coupled with decentralization of industry and population, and to achieve a regional balance of diversified industry.
(3) The use of garden cities, satellite towns, expansion of rural towns and trading estates was to be reviewed as a means of implementing this policy.
(4) Assistance should be given to Local Authorities to tackle the problem regionally and the Central Authority was to have the right to inspect all planning schemes.
(5) The Authority was to be responsible for research on the location of industry and the use of natural resources. It was to be able to anticipate depression in particular areas and encourage development before depression occurs.

At the time when the report was released, war broke out and for a spell, it was shelved. But as the war ended, the government adopted it as a base for the Distribution of Industry Act, 1945, the New Town Act, 1946 and the Town and Country Planning Act, 1947.[6]

The Distribution of Industry Act became the foundation for regional policy from 1945-1960. It was partly supplemented in 1950, and in 1958 a clause was added concerning industrial loans. However, thereafter, the basic character of the Act remained unchanged.

In this Act, the Special Areas enacted before the War were changed and the terminology "Development Areas" were adopted. These Development Areas act as social and economic units appropriate for comprehensive development.

As for the boundaries of the Development Areas, the North-eastern Area of England was expanded to included a part of Scotland and a part of Wales, but was otherwise preserved.

The population of the Special Area in 1939 was about 4,000,000 persons making up 8.4% of Britain's total population. The four Development Areas population came up to 6,500,000, an increase to 13.5%.

In 1946, the districts of Wrexham, Lancashire and Wigan St. Helens were incorporated into these four Development Areas. In 1948, North-west Lancashire, Merseyside and the Scottish Highlands were also scheduled.[7]

However, in either employment or income level terms the area worse off was Northern Ireland. Since it was self-governing, however, it was not the concern of Westminster Departments, but passes its own legislation to attract industry to the province. It was, therefore, not scheduled as a Development Area, but inducements were offered under the Northern Ireland Capital Grants to Industry and Industrial Development Acts and industrial estates organised and run by the Board of Trade.

The main responsibility for policy in Great Britain was given to the Board of Trade which was to take over the work of the Special Area Commissioners. The Board of Trade was enabled : —

(1) to build factories in Development Areas, buying land by compulsory purchase if necessary.
(2) to make loans with the consent of the Treasury to industrial estate companies.
(3) to make provision for basic public services.
(4) to reclaim land.
(5) in addition, the Treasury could give grants or loans to assist specific industrial undertakings on the advice of the Development Areas Treasury Advisory Committee (DATAC) provided that the committee were satisfied both that the project was commercially sound, and that finance could not be raised from another source.

An additional item was the System of Industrial Development Certificates introduced by the Town and Country Planning Act of 1947 which made it compulsory for a new industrial development of more than 5,000 sq. ft. to have a Board of Trade Certificate before planning permission could be granted.

With the destruction of the War, the control of investments and restriction of demand for all sorts of products caused a tremendous impetus for industrial expansion and development. Moreover, the government was determined to keep the level of aggregate demand high to secure full employment. With such a large amount of new development ready to take place, the potential industrial mobility was extremely high. As such the opportunity was ripe for steering industry into new locations.

Thus the government entered this situation in 1945 by using a building licence system to keep a very strict measure of control in parts of the country which were not scheduled as Development Areas.

In the Development Areas, the government converted large numbers of munition factories for commercial use, and built factories on its industrial estates. As a consequence, they received over 50% of the new industrial building in the years 1945–47, increasing employment by 190,000 persons.

A second important measure in the Barlow Report was the building of new towns.[8] Slum clearance, the rehousing of urban populations and the repair of war damages together required a policy of urban development. When an area was rebuilt it was impossible, with acceptable population densities to rehouse the whole of the population which the area previously held, thus making development of new urban areas necessary. At the same time, awareness of the congestion problems of large cities and the social desirable of cutting down work commutation time seemed to indicate that new towns would be the most satisfactory type of development.

Then came the moment in 1944 for the systematic introduction of the Greater London Plan. This Plan through the request of the Town Planning Ministry was drawn up by P. Abercrombie, and 10 new towns were outlined in detail. This plan was publicly adopted by the government.

The basic principle of these new towns was a self-contained and balanced regional community. Self-containment implies a comfortable living environment, with self-sufficiency in employment opportunities without dependence on any large cities.

With the initiation of the Garden City, the point of Self-containment was not always fully considered. Howard did describe in "The Garden Cities of Tomorrow", a form of Garden City with a workplace harmonised with nature and agriculture and commercial, recreational and housing facilities, but no mentioned was made of self-containment.

This term was only first mentioned in 1920 in a pamphlet on Welwyn Garden City produced by the Garden City Association. In this was described, workers staying in new houses would be able tc commute easily to their healthy factories which would be closely connected to transportation means. It would also independently fulfil the expected social and structural demands of a population of 40,000–50,000.

Howard also detected the weaknesses of housing and industrial parks during that time and showed in detail, self-containment as a valuable characteristic of a garden city. Even in social life, it was to be a town that would provide a fulfilling life and a balanced social organization.

The organization, finance and development authority necessary for the institutionalization of this principle was examined, and this was undertaken by the New Town Committee established in 1945 headed by Reith.

In 1946, this Committee under Reith presented its final report with the follow-

ing contents : —

(1) New Town Development Bodies

For each particular new town development planning, a specialised body can be set up. The most desirable would be a development corporation set up by the government, but it is also possible for local public body to propose the new town plan and the development corporation to carry out the development.

(2) Power and Finance of Development Corporation

In a development corporation, there is no difference in the subject of establishment by the government or by a local public body as both has the authority to provide public facilities.

This is provided that through mutual agreement with the local public body the bounds of responsibilities may be decided, after which facilities built by the public corporation may be transferred to the local public authority within a suitable time period.

Also considering the fact that the finance is a framework of an independent accounts system, and loans are obtained from the government or local public bodies, it is necessary to have special measures for interests, etc in intial development periods when expectations of revenue is negative.

(3) Course of New Town Development

In large-scale expansion of existing small towns there is an unavoidable task of redevelopment of the problematic old streets and thus a new development course through governmental circumstances is desirable.

(4) The Size of New Town

The ideal population size would be form 30,000 to 50,000 with a density of 13 persons per acre. A 3/4 mile agricultural belt should surround the urban area.

A large portion of this makes up the New Towns Act that was adopted in 1946. Thereafter, besides the 1959 Act revision, no other major changes in the system were made. The following are the main items in the New Towns Act of 1965 : —

1) Designation of the New Town

The new town development is designated after the Minister of Housing and Local Government passes the judgement and consultations are made with the local public body. In such a case the local public body do not only act as a special city or district or municipality administering the designated area but also as a committee for river control, and the supply of gas, electricity and water. Needless to say, consultations are held with the respective finance, transportation, scientific, technology, agriculture and marine ministries. Furthermore, when new town designation objectives involves the promotion of Development Areas, consultations with the Regional Economic Planning Council are held.

On the completion of consultations among various departments, the designation orders are announced. The New Town's designation map, planned population and objectives would be gazetted or published in the local media.

Published items incline inspection venues and methods and periods of voicing

oppositions. In the case of oppositions, the Minister holds a public hearing and the results would be referred to, revisions made, if necessary, or the designation order made be passed on unchanged. Alternatively, if the local planning departments which administers the designated area do not revise it according to opposition opinions, the Upper House or Lower House of the Parliament could invalidify it. Also, unauthorised acts or procedural violations made by the Minister may be brought to the Supreme Court. In this way, the powers of the Minister are controlled.

2) Basic Planning and Operation Planning

On the confirmation of the basic scale and the objective of the new town through the designation order, the Minister sets up the New Town Development Corporation. The first task of this Development Corporation is the drawing up of the basic plan and in this case where a city has high governmental capacity, planning operations based on partnership relations are formed as a basic principle for collaborative activities. In other case, the Development Corporation, before publicly presenting the initial plan to the Minister, gathers with the concerned local bodies for a public hearing with citizens over the intermediate report. For the purpose of incorporating citizens' participation at the plan-drafting stage, local citizens organises an inspection body with the cooperation of specialists to contribute their comments.

The Development Corporation then draws up a detailed concrete plan and present it to the Minister. The Minister discusses with the respective local oganizations and finally confirms the order.

3) Development Agencies

The New Town development is carried out not only by the Development Corporation but also by related local public bodies and private agencies. In the case of housing construction, building of owner-houses is entrusted to private sector investment.

4) Organization of New Town Development Corporation.

After the designation order of the New Town, a Committee making up of a chairman, vice-chairman and 7 members is established by the Minister from the Secretariat. The selection of these members has to be done on consultations with the respective local public bodies. Though there are no restrictions on the Secretariat, most of the members are from financial, administrative, civil construction, designing, local social cooperation and other fields.

5) Powers and Actions of the New Town Development Corporation

Since the role of the New Town Development Corporation is the implementation of the development of the new town, the powers assigned to it are substantial. The following are limits of the standardized actions : —

(i) The development work of housing land and general gains from the land within the new town area.

(ii) Construction of roads and pathways, lighting of roads and location of parking spaces.

(iii) Construction of sewage system and disposal facilities.
(iv) Construction of corporation lease housing and attendant facilities, including local public organization of housing site or the leasing to private contractors.
(v) Construction of corporation lease factories or the leasing of factories sites to private enterprises.
(vi) Construction of corporation lease shops or the leasing of shop sites to private enterprises.
(vii) Construction of community centres, pubs, etc.
(viii) Construction of churches and the leasing to religious groups.
(ix) Construction of youth centres, citizens hall, etc and leasing to local municipalities.

Gas. electricity, water and telephone, etc are normally managed by the Committee system. Public park facilities and other educational facilities are taken over from the corporation by the district and municipalities. Other recreational facilities are constructed by private enterprises at the stage of population increase.

6) Principles of Expropriation and Compensation of Land

The New Town Development hold great powers of expropriation but tries as far as possible to avoid expropriation formalities and manages it through peaceful procurement.

In 1946, by the Land Expropriation Rights Act, the Expropriation of land was made easier. By this, the occupation of land would require the payment of compensation. The principles of compensation has changed with times but in 1961, the Land Compensation Act was reorganised. The expropriation price was decided through market prices determined by definite development activities, but in principle was determined by market prices which supposes the non-designation of a new town.

3.2 Recent Regional Policy

The year 1960 saw a turn in the development of post-war regional policy when the Distribution of Industry Act of 1945 which was the foundation of post-war policies was abolished. In its place, the Local Employment Act was enacted in 1960.

In this Act, the major revisions included the redesignation of the areas subjected to assistance. The prior Development Areas were abolished and the authority to designate Development Districts was assigned to the Board of Trade. The Board of Trade may designate a region a Development District in the case when a 4.5% or more employment rate occurs, or when a rise in umemployment rate is expected to occur.

Later, when the Labour Party took over the government, the Development Districts based on the Industrial Development Act of 1966 was abolished, and new Development Areas were defined. But no changes were made for the means of control of new industrial development. Because of this, enterprises in the designated areas were able to procure special funds and aids for expansion works based on

recommendations of the Consultation Committee of the Board of Trade.

Besides these, the Board of Trade handed over to enterprises building factories in Development Areas, enterprises leasing factories at favorable terms and construction subsidies with similar privileges.

With the 1963 Loan and Local Employment Act, the system of subsidies and inducements for investment in factories and machinery were introduced.

Furthermore, an accelerating discount repayment to increase the repayment rate of investments in factory and machinery were sought by the construction industry of the Development Areas. By this, enterprises could if so wished be exempted from taxes until the full costs of investment was recovered.

The latest inducement measure introduced to expand industries in Development Areas was the Regional Employment Premium. This provides direct subsidies to labour costs and was financed through a Selective Employment Tax System.

In order to expand new industries in the Development Areas, there need to be training of fresh labour in response to the change in industrial structure. So in 1964, by the Industrial Training Act, the Ministry of Labour was empowered to establish training committees for the various departments of industry and commerce. Employers were assisted by subsidies to provide machinery for this training. Trainees were exempted from paying training fees which are beared by the enterprises.

One important development by the regional policy was the establishment of the regional planning system.

On the national level was the establishment of the National Economic Development Council. England was divided into 8 planning regions ; Scotland, Wales and Northern Ireland was included, making a total of 11 regions. For each of these, a Regional Planning Council and Regional Economic Planning Committee was set up.

In Fig. 3, regional headquarters of the established Planning Regions, Regional Planning Council and Regional Economic Planning Committee are shown. Members of this Council include 18-37 persons which are appointed by the government. Each region is represented by an executive, labour union member, scholar, etc. In Scotland and Wales, the Council Chairman is the Minister of State.

The Committee is made of a very large number of govermnent officials. It is characterised by a composition of officials of each government department in the region. Due to the vertical relation of departments, varying activities of the departments are brought into line.

By this way, the Council executes the strategy of the Committee for regional planning and the utilization of regional capital. The main function is to assist the draft of the Regional Plan and gazette the implementation of the Plan.

The Committee coordinates the work of each regional department which executes the regional Plan and development.

At present, Survey reports in all planning regions are written up. In the report on England's regions, abundant information on each region and gazettement of

policies are all presented.

The Council carries out analysis that provides the basis for discussion on the future of the region, so it does not actually restrict the government. But in Scotland and Wales, since the Council Chairman is the Minister of State, no responsibility to other regions are beared.

In the Scotland Region Report, accompanying the announcement of the National Economic Plan in 1966, the Scottish Ministry was said to be the lead in regional planning.

The Scottish economy described in 1965 and 1975 reports, shows the survey results on which the planned was formed. In this plan the objective to increase production and employment to be achieved by 1970 was outlined. Furthermore, the problems of the Scottish regions, i. e., the Highlands, North-east Scotland, boundary regions with England and South-west Scotland should be sufficiently analysed and the construction of a central growth area to be undertaken.

Later, the Highlands and Islands Development Board which took over the development of the Scottish Highlands and Islands was established. These areas represent Britain's most troublous areasas rate of population decrease is steep and the economy depressed. This Committee did not only draft policies or raise regional strategies but also implements them. By this way, the Committee represents an organization of planning and development. Moreover, it can procure land and execute operations through compulsory expropriation and autonomous management. It manages a comprehensive area of the Highlands and Island problems, ranging in a wide range of activities.

Next, we will look into the transition of the New Town Policy.

Following the progression and expansion of the idea of new towns, its position was finally secured in the 1963 and 1964 London White and South-east Survey Report.

In the London White Paper, it was shown that London's congestion was further enhanced by the expansion of employment of white collar workers and its population could not be suppressed by just distributing them in the surrounding areas.

In definite terms, a strict permit system ruling the location of industries and factories with large-scale facilities were prohibited. But for existing buildings, extensions and changes in land use improvements of offices, 1/10 of existing space or 1,750 cubic feet, whichever is larger, were allowed. For industrial buildings in general, no restrictions were made for existing buildings, but in the case of transfer or new construction, a permit was necessary from the Board of Trade if the floor space exceeds 5,000 sq. ft. As a result the rise in number of offices meant a rise in white collar population. Consequently, as this do not provide any basic solution to the congestion problem, the development of new towns on proper scales were deemed necessary.

In the South-east England Survey Report, it was shown that the function of large-scale new towns was not to absorb London's overflowing population but to act as points of regional development.

Thus large-scale new towns were well-separated from London, it was to absorb London's growth function, and especially through the absorption of business and commercial activities, it would take over London's role as a growth base.

New towns of about 250,000 population were constructed in Southampton Portsmouth District, Newbury Hungerford District and Bletchley District.

Through this the new town policy paved the way towards a regional policy with regional balanced growth as an objective. However, these policies do not neglect the garden city concept which is not distinguished from the basic planning of industrial and population distribution of promotion and congested regions in Development Areas as mentioned in the Barlow Report.

Thereafter, Survey Reports for each region were published and following this is the outline of policy for each region.

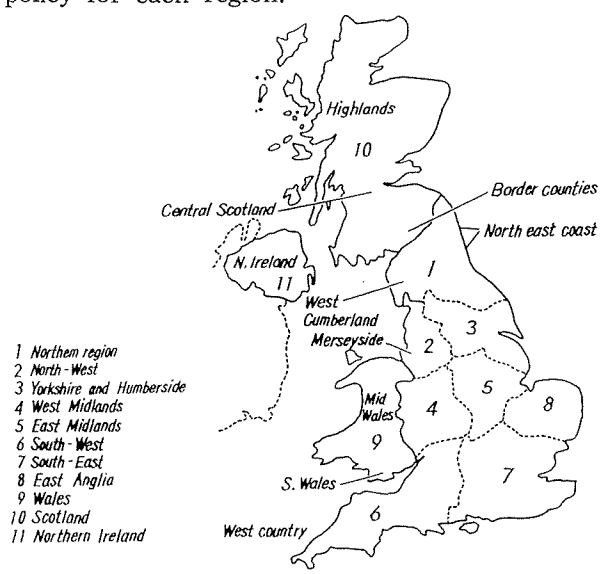

Fig. 3. Planning Regions.

3.3 Regional Policy of Respective Regions

(1) Northern Region

This region of 5,946 sq. mi. had a population of 3,127,000 in 1974 with a working population of 1,245,000 persons and a high unemployment rate of 4.7% compared to the national average of 2.7%. The regional headquarters is located at Newcastle.

This region stretches from the southern coast of Scotland to the Northern coast of England, to the Yorkshire Moors in the east, and the Moorcambe Bay in the west. Constituents of this region are the urban districts of Northumberland, Durham, Cleveland, Cumbria, Tyne and Wear.

This is a region of mostly highlands, low population density, with a large number of national parks. Population is mostly concentrated in the north-western parts between the Tyne and Tees Rivers. In this region, coal iron, gold, shipbuilding and chemical engineering makes up the traditional Heavy Metal Industrial

Area.

However, as industrial employment opportunities are decreasing, the government is further diversifying the regional economy by industrial policies and financial assistance thereby increasing the location of many kinds of constructive industries like medical products, textile products, precision machinery, electricity, electrical appliances and scientific equipment.

The latest significant development is the construction of new iron works near the River Tees. In present construction, 12 million tons a year was produced in 1980. Through the development of the North Sea oilfields, too chemical industries were also expanded, and 87,000 new jobs were created.

At present, many new towns like Peterlee and Aycliff have been built and they provide the coal miners and factory workers with comfortable living environment. Washington, a new town planned in 1964 had 130 factories and 7,000 people employed there, and in 1975 the population increased to 37,000.

Following the expansion of Newcastle was the cities of Killingworth and Cramlington with projected populations of 17,000 and 62,000 respectively.

The Regional Planning Council in cooperation with the Regional Economic Planning Committee took over the task of the regional policy of this region. With the lead of this region a debate was held concerning the drawn up regional plan and regional development. A new industrial policy in order to provide assistance of opportunities and facilities to the enterpreneurs was materialised. For this purpose, the local self-government strived to develop the local public transportation system, administrative facilities, highways and airports. This was first established at the regional level. The Consultation Committee for sports and recreation was changed to the Northern Sports Committee in 1973.

(2) Yorkshire and Humberside Region[9]

This region of 5,954 sq. mi had a population of 4,896,800 in 1974 with a working population of 1,991,400. The unemployment rate was 2.7%, similar to the national average. The regional headquarters is located at Leeds.

This region is located between the Northern Region and the Central East Region of England. It is made up of the West and South Yorkshire Industrial District, and the Northern Yorkshire Agricultural District and the Humberside District. Constituting counties are North Yorkshire, West Yorkshire, South Yorkshire and Humberside.

The population is mainly concentrated in the West and South Yorkshire Industrial District, but is also dense in Hull (in Humberside) and in Grimsby. About 70% of Britain's wool industry is found in Bradford, Huddersfield and Halifax in West Yorkshire.

The main city of this region is Leeds in which is located the world's largest ready-made clothes industry.

Sheffield deals in heavy industries producing half of Britain's special steel products. Particularly important are the coalfields in Yorkshire. Other important industries are food products, glass, chemicals, automobile parts, electrical motors,

plastic and printing. Both the Humber ports of Hull and Grimsby are Britain's largest ports and the landing capacity is also 1/3 of the national capacity. Oil refineries are situated in Immingham along the Humber estuary. Kingston-upon-Hull Port is Yorkshire's export port and capacity of handled goods is nationally significant.

Although this region centres on industrial development, it is geographically-oriented towards Britain's domestic trade and trade with other European countries.

In 1976, the Regional Economic Planning Committee decided on the following priority-weighted policies : - 1) the expansion of industrial development 2) port facilities 3) housing, water supply, treatment facilities, air pollution, health, social services, education and job-training facilities.

(3) East Midlands Region

This region of 6,024 sq. mi had a population of 3,719,000 in 1974 and a working population of 1,483,000 and an unemployment rate of 2.2%, a rate lower than that of the national average. The headquarters is located in Nottingham.

The region is situated in between Northern England and Southern England. It comprises the districts of Nottinghamshire, Derbyshire, Lincolnshire, Leicestershire and Northampshire.

Industries are diversed constructive type based on coal, iron and steel, limestone and gold mineral resources.

Large cities are absent except for a few medium-scale industrial cities. Industrial products of these cities are haberdashery, knitwear, undergarments, drugs, electrical appliances and airplane engines.

Generally, urbanization is not as rapid as neighbouring regions, and the population is mainly concentrated in the main cities of Nottingham and Leicester. Agriculture is also important here. Derby is also one of the centres for Britain's construction and administration of railroads and technology. It is here that a main trunk line of 240 km is being designed.

The Boston Port's shipbuilding dock is being renewed. Corby and Northampton are two new towns.

The Survey for this region was carried out twice by the Regional Economic Planning Council in 1966 and 1969. According to the reports of Nottingham and Derby, the type of industrial capital, the reopening of railroad service and construction in the entire region was being planned.

(4) East Anglia Region[10]

This region with an area of 4,851 sq. mi. had a population of 1,758,300 in 1974, a working population of 665,000 and an unemployment rate of 1.9%, a rate lower than that of the national average. The headquarters is located at Norwich.

Districts making up the region is Norfolk, Suffolk and Cambridgeshire. The coastal line of the region stretches from Wash Bay to the Stour Estuary.

It is an agricultural area with an agricultural population of 6.7% higher than the national average of 2.8%. Other industries include food production, agricultural

machinery and fertilisers. Also noteworthy are the footwear industry in Norwich and assorted industries in Ipswich and Peterborough. Cambridge is the centre for research facilities of electrical appliances and scientific equipment.

Lowestroft is an important fishing port and Great Yarmouth possess a trawling fishing fleet. Since these ports are close to the North Sea oil-fields, they serve as workshops for small ships and as supplier of goods.

Peterborough is another new town absorbing the population from London.

In 1968, the report for East Anglia, was drawn up by the Regional Economic Planning Committee. Contents of the report included population structure and change resulting from inmigration from London, labour, characteristics of industrial economy and employment opportunity, income level, transportation, ports, social services and so on.

In 1975, the Strategic Choice for East Anglia was published. The regional utlines and this region was recognised as a region of high potential growth, so special population inducement policies were not necessary.

At present new towns and expansion cities was to be completed, especially in Cambridge where historic features was to be conserved and facilities for surrounding villages was to be provided. The production of agriculture and food products as the mainstay of the regional economy was to be expanded. Beautiful coastlines was to be maintained as a step towards recreational facilites and improvement of the environment.

(5) South East Region[11]

This region of 10,511 sq. mi. had a population of 16,954,800 in 1974, a working population of 7,368,000 and an unemployment rate of 1.6%, a rate lower than that of the national average. The headquarters is located in London.

Districts making up the region are Greater London, Bedfordshire, Berkshire, Buckinghamshire, East Sussex, West Sussex, Essex, Hampshire, Hertfordshire, Isle of Wight, Kent, Oxfordshire and Surrey.

Britain's capital, London, one of the world's largest cities exceeds the size of a district. It is a centre of government, jurisdiction and information, a centre for domestic and international trade as well as finance. It has an industrial area situated in Tilbury on the lower Thames with a deep harbour and is Britain's largest port. Also located here are middle and small scale enterprises like printing, clothes production, food and beverage, furniture, precision machinery and other specialised construction industries. In the outer areas are light industries, consumption, industrial plants and research equipment industries. At present, population and employment is decreasing. As a result, the adoption of skilled labour in decreased areas has become difficult and most of the industries have shifted to the surrounding new towns and expanded cities. Examples are the airplane industry of Hatfield and the automobile industry of Cowley and Oxford.

The main industry of the south if tourism and being near to London is well-patronised in summer, especially in Brighton.

Southampton is a centre for travellers as well as shipbuilding, oil refinery and

the electrical appliance industry. Ferryboats are available in Dover, Folkstone and Newhaven.

Transportation lines have lately been improved with the extension of the subway to Heathrow Airport. The railroad from London to Hatfield, Welwyn, Stevenage, Hertford and Royston had been electrified.

The London international airports at Heathrow and Gatwick has been modernised to cope with the increase in flight demands.

From 1946, 11 new towns were built and out of this 9 served as solutions to London's housing problem.

In Milton Keynes, the planned population of 250,000 by 1990 increased to the present level of about 800,000 with an annual inmigration of about 6000 families from London.

In the 1960 Strategic Plan for the South East Region, a flexible planning for the accomodation of increasing population was drafted. In this way, approximately 4-5 million people will move to the other newly selected areas within the century.

(6) South West Region[12]

This region of 9,207 sq. mi. had a population of 4,205,700 in 1974 a working population of 1,519,300 and an unemployment rate of 2.7%, similar to the national average. The headquarters is located in Bristol.

The districts are Avon, Cornwall, Deven, Dorset, Gloucestershire, Somerset and Wiltshire.

This region consist mainly of beautiful natural scenery in the coastlines where historical towns and hamlets are the tourist attraction.

Growth here is higher than the national average and production industries are mainly centered in Bristol. Being the administrative and commercial centre, aviation machinery, cigarette, food products, paper printing, chemical and gold industry are located here.

General machinery, aviation machinery, office equipment are found in Northern Gloucestershire and automobile factories, railroad and general machinery and electrical machinery in Swindon.

In 1974, the Regional Economic Planning Committee announced "A Strategic Settlement Pattern for the South East" and a target year for the construction planning was accepted by the government. A stable growth for the entire region was anticipated. It also dealt with the issue of migration from retirements and increase of travellers. The conservation of environment in the course of development was to be one of the objectives of the future.

(7) West Midlands Region[13]

This region of 5,024 sq. mi. had a population of 5,180,600 in 1974, a working population of 2,247,000 and an extremely low unemployment rate. The headquarters is in Birmingham.

This region occupies a central position in Britain. The districts are the West Midlands Metropolitan, Hereford and Worcester, Salop, Staffordshire and War-

wickshire.

This region is characterised by its gold industry, gold products, automobile industry and gold-based industries. These are mostly located in Coventry and the New Midlands Metropolitan.

In Northern Stoke on Torent and Northern Staffordshire pottery was the main industry. Although the electric industry and other constructive industry are increasing, the traditional ceramics industry remains the largest in terms of workers employed.

The region is mainly industrial except for the central west part where 3/4s are devoted to agriculture. The tourist attraction here centers upon Stratford-upon-Avon, the birthplace of William Shakespeare.

Also, the National Exhabition Centre, opened in 1976, is a prominent feature in Europe with a total area of 1,962,510 sq, ft.

The future planning of the region is contained in the report "The West Midlands — An Economic Appraisal" presented by the Regional Economic Planning Committee. The report describes the future change of economic development and industrial structure.

Another report, "A Developing Strategy for the West Midlands" presents the objectives of physical planning and long term planning in the present century.

Together with the government, the Committee presented the first report in 1975. It was stated that in order to solve the population concentration problem of Birmingham, 2 new towns — Redwitch and Telford were planned. And through the urban redevelopment of Birmingham and Coventry, environmental pollution of the main cities would substantially reduce in the 10 years and rivers and canals would also be cleaned. Moreover, the depressed areas of North Staffordshire would be redeveloped.

(8) North West Region[14]

This region of 2,821 sq. mi. had a population of 6,593,200 in 1974, a working population of 2,702,000 and an unemployment rate of 3.5% a rate higher than that of the national average. The headquarters is located at Manchester.

This region is surrounding by the lake area, Pennin Ranges, Irish Sea and the Midlands. The districts are Lancashire, Cheshire, Greater Manchester Metropolitan and Merseyside. Population is mainly concentrated in Manchester and Liverpool. The region is Britain's most industrialised region.

Manchester, the commercial centre of the cotton industry is the financial pivot of Britain. The port is made prominent by the Manchester Canal flourishing in foreign trade.

Liverpool is important for commerce, its harbour, automobile and processing industries. The deep harbour favours the entrance of large oil tankers.

Lancashire's cotton industry is the main activity although it is decreasing being taken over by the electrical and chemical engineering industries. Other industries are shipbuilding and Birkenhed and glass-making in St. Helens making Merseyside the most progressed region.

In 1974, the "Strategic Plan for the North West" was published. In the report was written that in order to improve the living environment of the region, the redevelopment of slums, building of parks, land development, prevention of pollution, control of air pollution, etc was to be dealt with.

The development of this region was to be directed towards creating a Mersey area that would connect South Lancashire, Merseyside and Great Manchester, and with a corridor development of transportation systems would extend the connection as far as Central Lancashire New Town.

The government also saw the Mersey Belt as a positive move towards regional development and environmental protection.

(9) Wales[15]

This region of 8,018 sq. mi. had a population of 2,759,300 in 1974, a working population of 992,000 and an unemployment rate of 3.9%, a rate higher than that of the national average. The headquarters is at Cardiff.

This region constitutes 8.5% of Britain's land area, but the population is only 4.9% of the total, most of it concentrated in the southern industrial area.

Swansea and New Port are Wales' largest ports centering on engineering, commerce and administration. The industries of Wales are changing significantly with the plunge in traditional industries of coal and iron and steel. Flourishing industries are oil refinery, synthetic fibre, clothes electrical appliances, pharmaceutics, automobile parts and light industries.

The Shotton iron and steel industry produces 1 million tons a year and has been planned to be expanded with the British Iron and Steel Company. The government is making efforts to create 7,000 jobs by 1980 through the movement of government offices like the mint to South Wales and the Trade Statistics Office of the Board of Trade to Newport.

Milford Haven Port was to be built into an oil base to receive large tankers and crude oil would be sent by pipeline to Llandarcy where it would be refined. Other important industries are agriculture and tourism. Three national parks are located here.

Agriculture and industry are the important mainstay of Central Wales. The area also serve as a water catchment area for Merseyside and Central Brirain.

The Government Development Bureau of Wales' agricultural district has the joint responsibility of the economic and social development of the region. The economic development here is based on the report "Wales : the Way Ahead" of 1967.

The land Bureau of Wales passed the Community Land Act for the purpose of construction planning of the development region. The Wales Development Company was also created for locating industries.

(10) Scotland

Scotland, with an area of 30,414 sq. mi. had a population of 5,226,000 in 1974, a working population of 2,084,000 and an unemployment rate of 4.1%, a rate

higher than that of the national average. The headquarters is located at the capital, Edinburgh. Scotland has 32% of Britain's area but only 9.3% of the total population.

Scotland is a mountainous country with a small population capacity resulting in a region of sparseness, especially in the north west Highlands and islands where the population is only 300,000.

3/4 of Scotland's population and most of the industrial activities are concentrated in the central plains of Glasgow, Edinburgh and Dundee. Glasgow is the largest city centering on industry. Edinburgh is the capital and administrative center, also important in engineering ports and financial institutions.

Main industries in the central plains are shipbuilding, shipping equipment, iron and steel, electrical appliances and automobile. The highlands and islands are important for forestry, fishery, tourism, fibre goods, water power, electrical power, paper products and aluminium.

Scotland's economy has drastically changed in the past 20 years with the decline of the industries like coal, shipbuilding, spinning and the relocating of various new industries. But a high unemployment rate is still apparent.

In order to solve these problems, the coal mining area was condoned into a Development Area, a new town was constructed and the Scottish Development Agency was established. Old industries were replaced by new American-financed industries. From 1959–1973, 360 new factories were established creating about 68,000 jobs.

The development of the North Sea oilfields after 1970 greatly influenced Scotland's economy, and by 1975, 23,000 jobs were created in oil-related enterprises. In 1980, 95 to 115 million tons were produced from the oilfields reaching a self-sufficiency rate for Britain.

Before 1975, 133 projects were being financed by the European Community Regional Development Fund.

The Highlands-Islands Development Committee was set up in 1965 and ecomic and social improvement was carried out. By 1975, £ 26 m. of capital was raised along with private investment creating 11,000 job opportunities.

An important contribution to industrial development was the development of new towns. At present, new towns are underway in Cumbernauld, East Kilbridge, Glenorthes, Irvine and Livingstone. Government offices were shifted and 7,000 jobs were created.

Transport lines were improved when the railroad from London to Glasgow was electrified. Container terminals were constructed in Glasgow, Edinburgh and Dundee directly connecting Britain with other countries.

Economic surveys were carried out for each district and in 1974, the report on Western Central Scotland "The Western Central Scotland Plan" was published.

(11) Northern Ireland

This region of 5,452 sq. mi. in area had a population of 1,547,000 in 1974, a working population of 494,000 and an unemployment rate of 6.4%, a rate much

higher than that of the national average. The headquarters is at Belfast.

This region's area is 5.8% of Britain but the population is only 3% of the total. Most of the people are concentrated in the capital, Belfast.

The economic problem here is especially acute. Industries consist mainly of cotton, shipbuilding and agriculture but these are deteriorating. Thus, for the past 30 years, industrial development was made possible with the aid of the Northern Ireland government and 75,000 jobs were created. These included synthetic industry, food processing, etc, and consequently tertiary industries of finance, commerce and soical services and education created further employment.

As a result, in 1975, Northern Ireland showed a rate of productivity increase higher than the national average. Regional Economic Development Policy was formulated by the Board of Trade with the participation of the National Labour Supply Bureau.

New Town construction included Antrim, Ballymena, Graigavon and Londonderry. Five beautiful national parks were created for tourism.

With substantial public investments, housing was improved and old cities were renewed in Belfast and Londonderry.

4. The Transfer and Transformation of the Garden City Concept

The strongest influence of the English regional planning on the urban planning in Japan was from Howard's Garden City concept. Through the construction of Letchworth and Welwyn Garden Cities and the establishment of the International Garden City Association, this concept became known all over the world.

The concept is contained in the publication by the Local Bureau of the Home Ministry in the detailed description on "The Garden City" and the Garden City Company Ltd" which constructed "Denenchofu" (the first Garden City in Japan). In this book, the first two chapters were devoted to Garden City and the rest describing Western social works, living improvements and education.

In Britain, in order to solve the problem of workers slum in metropolitan London and to improve country life, the garden city was built to shift workmen to newly built towns, and this shift of industries to the country-side would prevent the further devastation of the agricultural areas. But in the Japanese case, Howard's Garden City concept based on the elements of public ownership form of administration, management, self-sufficiency and a balanced society, as well as the concept of a social city was not fully described.

The man who so skilfully transferred the Garden City idea, Takayuki Ikue visited Europe and the United States twice, thereby deepending his knowledge of the subject. With the visit of Letchworth, he was known to have the most accurate understanding of the Garden City, but as his opinions differed from the Home Ministry, he was not able to develop the Garden City concept as a social worker.

The Garden City Company Ltd., established in Japan was another idea transferred. At that time, population and industry was repidly flourishing in favourable

conditions of the First World War and in suburb areas, houses were being built in random disorder. Thus, the idea of separation of housing and working place of suburbanization was conceived by Eiichi Shibusawa and in 1918, the Garden City Company Ltd was established. Japan's first City Planning Act was enacted in 1919 but since the Act incorporates only matters of urban facilities, the Garden City ideas were not covered.

This development, connecting the urban centre and suburb with trains to facilitate commutation, was a huge success. Even during the 1923 earthquake fires, this Denenchofu remained mostly unruffled, thus paving the way for greater suburbanization.

However, this was very different from Howard's self-sufficient, balanced regional socitey Garden City in that it was more oriented towards bedtowns and a San Fransisco type of suburban housing. Thus the Japanese Garden City is loyal to the concept in so far as the name is concerned, but its land development and electrical rail management is wholly of Japanese roots.

With the dawn of the Showa period, the deterioration of urban environment accompanying the suburbanization process became a current issue. The progress of urban planning activities was led by Issho Iinuma in his 1927 book "The Theory and Law of Urban Planning".[16] This book not only introduces the concepts and realizations of the Garden City concept, but also brings the Garden City into modern day context. The contemporary evils of overlarge cities deems a more decentralised local planning necessary.

He also stress the need for not just the construction of Garden Cities but a series of Garden Cities in joint relations in order to realise the full potential.

After the war, in order to recover from damages, large scale reconstruction works became the main activity. This was finished in 1959, but the completion rate was low, especially in Tokyo. At the same time, housing shortages became drastically acute and rapid construction was initiated. In 1955, through the Japan Housing Corporation, housing complex development rapidly progessed.

The first large-scale new town — Senri New Town — was constructed by the Osaka Enterprise Bureau on the Senri Hills 15 km north of Osaka City. The 150,000 population town is mainly a bedtown without working places.

The Japan Housing Corporation also built the Kozoji New Town at a site 20 km. north of Nagoya City.

Thus, the Japanese new towns are in essence bedtowns fulfilling the original characteristics of new town only in the scale dimension.

5. The Formation of Linear Urban Linkages of Middle and Small Towns

This theory was first postulated by Hirozo Ogawa.[17] In order to eradicate the consequences of overpopulation and underpopulation, he considered the improvement of the habitability of local middle and small towns. For years, he pursued research on the idea of linear urban linkages of middle and small towns the would preserve the "hometownness" of small towns as well as the charming anoymity

of large cities. By linking these existing middle and small towns through transportation means, qualities of the old towns may be brought out and charm in new towns are nurtured.

The theoritical basic concepts of this formation theory consist of dynapolis, population energy, topography of Japan and transportation.

(1) Dynapolis.

Dynapolis was first postulated by the Greek city planner C. A. Doxiadis. The main principles are i) comprehensive design ii) it is functioned by uniformed mutually dependent activities as part of an organistic system iii) It has freedom of active development iv) grows according to differing scales, in other words, having 4 scales of man, automobiles, aeroplanes and rockets.

The dynapolis has three basic laws, that is, the Law of Unidirectional Development, the Law of Development on a Perpendicular Axial System and the Law of the Urban Core Perpendicular Axial System expressed by highway patterns, as narrow large squares.

Ogawa draws upon the principles of this dynapolis to built up his theory on urban linkages formation.

(2) Population Energy

If there are $j, k, l, m, \cdots$, points centering on point i, each having the power of $X_i, X_j, X_k, X_l, X_m, \cdots$, and distance of time interval $R_{ij}, R_{ik}, R_{il}, R_{im}, \cdots$, the population energy of i, that is E_i will be,

$$E_i = G\frac{X_iX_j}{R_{ij}{}^b} + G\frac{X_iX_k}{R_{ik}{}^b} + G\frac{X_iX_l}{R_{il}{}^b} + G\frac{X_iX_m}{R_{im}{}^b} + \cdots = \Sigma\, G\frac{X_iX_j}{R_{ij}{}^b}$$

where, G, b is the experimental value.

Ogawa considered the close relations between population energy and the indicators that show the economic and social conditions of the region. and in the case where linear urban linkages are formed, and transportation means are provided between these towns, the population energy of this region will increase.

(3) Topography

With 30% of Japan occupied by highlands, the growth of towns are limited with most of the large cities located in coastal areas. Middle and small towns are mostly located in the remaining coastal areas or in long narrow valleys and river basins. Such regions enables the formation of linear urban linkages.

(4) Transportation

Supposing, we have n number of towns and link them all together, $\frac{n(n-1)}{2}$ number of transportation lines will be necessary. However, if we are to link them linearly, only $(n-1)$ lines are required. The difference between these two will increase as the number of town increases. Thus, for example, in the concentric expansion of central cities, the former (above) greater number of lines are necessary and the mere provision of these require huge costs.

If a linear urban linkage of middle and small towns are formed, a single line connecting all the towns would economise of transport lines. Mobility in a sparsely-populated region, too, can be made possible by the adoption of bus and local rail lines such that time and space of mobility between the linked towns may be contracted.

Furthermore, in cases where transportation demands are high, such a linkage of enable the introduction of new transportation systens like HSST and dual-mode buses will increase the provision of services towards the inhabitants.

Japan's cities and towns are mainly located in rows along coastal lines, rivers and valleys and existing transportation system of rail and road forms a linear direction of development. Here, the introduction of a new transportation system structured to differing scales, will re-organise the randomly aligned villages into a new uniformed town linkage.

On this point, characteristics of Ogawa's town linkage are summarised below : —

① it is a linkage of towns arranged linearly.
② no limit is set on each town's population size, but is to be about 200,000 persons within prefectural boundaries.
③ towns should not join, being separated by dividing green belts.
④ every town is closely connected by transportation systems or has the possibility for it.
⑤ the length of the linkage by this transportation in time distance is not more than an hour.
⑥ the location and functions of urban facilities are to be shared out among the linked towns or, if not, has the potential for it.
⑦ since the linkage complex is outside large city limits, influence from the latter is small, rather it has the role of serving the sparse region.

Observing the basic ideas of Ogawa, it seems to have been greatly influenced by the soical city of Howard's Garden City, namely the features of the anonymous charm of large cities and the hometownness of middle and small towns, including the sharing out of fuctions of urban facilities.

However, instead of constructing new towns as in Howard's Garden City Ogawa's urban linkages integrates existing middle and small towns, a characteristic made in Japan.

However, as this concept has not been sufficiently considered, we shall expand the scope to consider the essentiality and potential of linear urban complexes.

1) Expansion of the regional society

The standard of living will rise with the expansion of inhabitants' daily activities triggered by the development of transportation and communication (with motorisation in the forefront), thus stimulating high fluidity of regional activities.

Hitherto, the inhabitants' residing and working place has been the same and daily social activities are also limited. But these two aspects will be gradually separated and more diversified actions will be carried out over a wide area. These

actions are mostly characteristics of metropolitan regions but gradually even in agricultural, mountainous and village areas, the need for urban facilities increase and with the expansion of transportation and communication means between towns and villages, the situation today exists.

In other words, in all aspects covering commutation to work and school as well as daily shopping utilization of medical institutions and cultural facilities — these activities conducted will be extended beyond one's own residential town.

This arises from the fact that the selection possibilities of inhabitants are to be increased and this freedom of choice will be reflected in the diversity of employment opportunities and choice range of spouses, etc. In this way, the resulting social structure will not be too monotonous.

To fulfill this purpose, individual towns will not satisfy these inhabitants needs and in such a context, multiple urban linkages are necessary.

2) The expanding requirements of citizens from the government

Local self-governed towns and villages provides the people with basic needs of daily social life. But due to the recent rise in standard of living with economic development, these needs greatly expands. Also with urbanization, rural inhabitants are also demanding for these urban facilities. Provision of all facilities would prove too burdensome for a single town, so a functional distribution among several towns would sound more practical. Cultural facilities, which has a strong tendency to concentrate in central cities would also be better distributed.

3) Transportation utility

In the recent deficit accounts of financially inefficient bus operations a threat has been imposed on the continued existance of local rail and private bus lines. In this case, if a linear urban linkage complex is realised the expansion of transportation operation area would increase efficiency and a comprehensive unification of transportation means would give rise to sound transportation management. Moreover, the linkage would increase demand and consequent introduction of new transportation systems would increase services provided to the people. A single town alone would not be able to handle this.

4) Financial problems of towns and villages.

Japan, presently having entered a period of low economic growth and high national expenditure is experiencing serious financial difficulties, exerting strong influence on local financial accounting.

In sparse towns and villages, where rapid depopulation is depressing industries and income levels, balanced government financing is also declining. On the other hand, population concentration areas are demanding high investments in compulsory education and medical facilities.

The demands of each town and village would increase but in response to this, the solution cannot be provided at the single town/village level. Rather, it has to be tackled on a long-term planning basis after thorough investigations on the region

has been done. With the linear urban linkage, double investments would be avoided.

5) Need for control of population concentration in local central cities

The recent population concentration in local central cities has resulted various adverse consequences. These centrals cities absorbs the population of smaller towns and villages, increasing in its own size. Consequently, the insufficiency of facilities makes it necessary to avoid such problems. Therefore, the urban linkage might serve a possible antithesis to this effect.

6) Necessity for policy against sparse non-metropolitan districts

Industrial inducement policies are being implemented in sparsely populated areas, but these are not always sufficient in an economically depressed period.

At present, the Regional Inducement Corporation (Regional Corporation) has been established to promote industrial relocation and nuclear industrial complexes have been planned all over the country. This plan is based on the serious reconsideration of present industrial development and the strengthening of local participation and environmental conservation. Without planning from such a wide range of vision, the problems of commutation, industrial water, environmental facilities and energy supplies will not be effectively managed. The urban linkage may be a solution to this.

7) Necessity of children's educational environmental

Presently, deterioration in natural environmental in metropolitan areas has made it necessary to enhance conditions to nurture rich creativity and impressionability of children in natural environmental. The natural environmental so important in child growth will be provided by the green belts in between the linked middle and small towns.

8) Necessity in metropolitan districts.

The concept of urban complex linkages can also be applied to towns and villages in metropolitan districts. Transportation development in these regions, too can give rise to a certain extent of linkages. Moreover, it is a fact that population flows from the metropolis to these regions can cause urban pathology in the form of sprawls and the destruction of green in the bedtowns.

9) Necessity against environmental and resource problem,

The present population increase problem causing environmental pollution is intensifying. Until the population increase quietens down in the future, about an increase of 20 million in population will concentrate in the Pacific coast regions, further enhancing the deterioration there. These problems cannot be solved by a single town.

Therefore, an linear urban linkage adjusted to existing water resources has to be formed at a feasible capacity for the purification of water areas and disposal of waste.

10) Necessity for the energy problem

In present times of energy shortages, each region should create its own self-sufficiency. The hitherto forms of energy systems should be revised to make way to new energy systems of multiple uses of natural soft energy. The urban complex linkage provides an integrated energy region to create this self-sufficiency in energy supply.

However, on the other hand there are several problems apparent in the formation of this linear urban linkages of middle and small towns.

(1) the need for the establishment of unfailing cooperative relations between linked towns and villages.
(2) the fear of a nation-wide standardised and too monotised form of urban complex linkage.
(3) the fear of the rise of a narrow perspective outlook and local egocentric kind of regionalism among residents.

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Summary

In this paper, we considered the methods of transfer of the Garden City concept into the regional planning and city planning of Japan, and the transformation that may have occurred in the process. Next, "Urban Complex formed by Linkages of Middle and Small Towns", a planning theory conceived as a theory of planning in regional planning in Japan will be dealt with.

The main results are as follows.

(1) The strongest influence of the English urban planning on the urban planning in Japan was said from Howard's Garden City concept. The concept is contained in the detailed description on "the Garden City" by the Local Bureau of the Home Ministry in 1907. In this book, the first two chapters were devoted to Garden City and the rest describing Western social works, living improvements and education, and Howard's Garden City concept based on the elements of public ownership form of administration, manegement, self-sufficiency and a balanced society, as well as the concept of a social city was not fully described.

(2) The Garden City Company Ltd, established in Japan was another idea transferred. The idea of separation of housing and working place of suburbanization was conceived by Eiichi Shibusawa and in 1918, the Garden City Company Ltd was established. This was very different from Howard's self-sufficient, balanced regional society Garden City in that it was more oriented towards bedtowns and a San Fransisco type of suburban housing. Thus, the Japanese Garden City is loyal to the concept in so far as the name is concerned, but its land development and electrical rail manegement is wholly of Japanese roots.

(3) With the dawn of the Showa period, the deterioration of urban environment accompanying the suburbanization process become a current issue. The progress of urban planning activities was led by Issho Iimuma in his 1927 book "The Theory and Law of Urban Planning". This book not only introdues the concepts and realizations of the Garden City cocept, but also brings the Garden City into modern day context, and he also stress the need for not just the construction of Garden Cities but a series of Garden Cities in joint relations in order to realise the full potential.

(4) After the war, in order to recover from damages, large scale reconstruction works became the main activity. In 1955, through the Japan Housing Corporation, housing complex development rapidly progessed. The first scale new town-Senri New Town- was constructed by Osaka Enterprise Bureau on the Senri Hills 15 km north of Osaka City. The 150,000 population town is mainly a bedtown without working places. Thus, the Japanese new towns are in essence bedtown fulfilling the original characteristics of new town only in the scale dimension.

(5) The formation of Linear Urban Linkages of Middle and Small Towns was first postulated by Hirozo Ogawa. In order to eradicate the consequences of overpopulation and underpopulation, he cosidered the improvement of the habitability of local middle and small towns. He pursued research on the idea of linear urban linkages of middle and small towns that would preserve the "hometowness" of small towns as well as the charming anonymity of large cities. By linking these existing middle and small towns through trasportation means, qualities of the old towns may be brought out and charm in new towns are nurtured. Observing the basic ideas of Ogawa, it seems to have been greatly influenced by the social city of Howard's Garden City, namely the features of the anonymous charm of large cities and the hometowness of middle and small towns, including the sharing out of functions of urban facilities. However, instead of constructing new towns as in Howard's Garden City, Ogawa's urban linkages integrate existing middle and small towns, a characteristic made in Japan.