LANDSCAPE AND HUMAN LIFE

landscape and human life

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landscape and human life

tecture upon human activities

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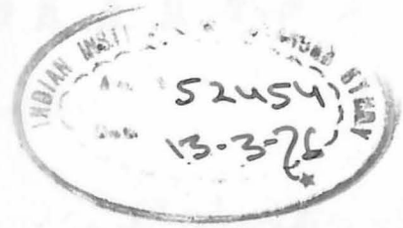

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foreword

This book is a record of the 9th Congress of the International Federation of Landscape Architects, held in Japan in 1964. More than a verbatim report of the papers given by leading speakers at the Congress, it is a new textbook on the subject of humanity and landscape design.

The event which stimulated the production of this book was the latest in a series of biennial congresses held to afford a platform for the exchange of ideas on landscape architecture from all parts of the world. Opening the congress, the President, Professor Francisco Cabral reminded the delegates that thirty centuries has seen a change from man fighting against the forest, to man fighting against a man-made desert. We are now preoccupied not with resisting nature, but saving it — we are even restoring the forests. Whereas in mediaeval times, country and town were in balance, the modern town is now independent of the surrounding country and has therefore become Megalopolis. Of these overgrown cities, Tokyo is now the largest.

Only comparatively recently have people become aware of the danger, and have introduced a movement for the preservation of landscape. But of course, preservation is not enough; — new landscape must be created, there must be planned land use, and the end result of planning is not a plan, but a new environment in which man may *live*. He referred to the title of the Congress: 'Landscape Architecture in Human Life', and warned all who are members of the planning team that we must become more and more involved with the *whole* landscape — the whole of human environment.

The 9th Congress was the first to be held in Asia, and no country could offer a better example of the interaction of humanity and landscape than Japan.

Japan has had only a comparatively recent introduction to the Western world, having been isolated by its own intent until 1853. It is small in scale, insular, heavily populated and mainly agricultural until recent times when industrial development began to proceed at a phenomenal rate. Japan has faced in the last 50 years problems which western countries have had two centuries to solve. For this reason it can be seen as a microcosm, pointing with startling clarity the influence of the landscape on humanity, and the impact of human life on the landscape.

All the factors affecting this theme are present in Japan; — it is a small isolated country with lovely scenery, a strong 'human-scale' agricultural tradition and a fairly wide variation in climate through latitude and season. The Japanese have always had a veneration for nature, and they have also had a long-established tradition of art in many forms. We must now ask what relevance has this for today. Referring to the relation of Art to Environment, Gyorgy Kepes, Professor of visual design at M.I.T. has said: 'There are now tremendous new opportunities to re-shape our spatial environment. Our technical knowledge and competence offer us many solutions for a more comfortable world . . . . For various reasons these new opportunities have not yet been explored. Our best artists have concentrated on personal comments, communicating their feelings and thought through the channels of galleries, museums or private collections . . . . In the last few decades, projects on an immense scale have transformed our cities, but very few of them have had a convincing artistic focus. In fact there is not one new environment which is comparable to the work of some of our easel painters in expressive intensity.' *

Japan has had a long history of feeling for the amalgamation of art and nature, and from the fusion of the two has come the unique historical Japanese garden. In a sense however, these small jewels of garden art are only comparable to easel paintings for they have so far made little contribution to the environment of the modern Japanese citizen. This fact is not overlooked by the large number of Japanese landscape architects

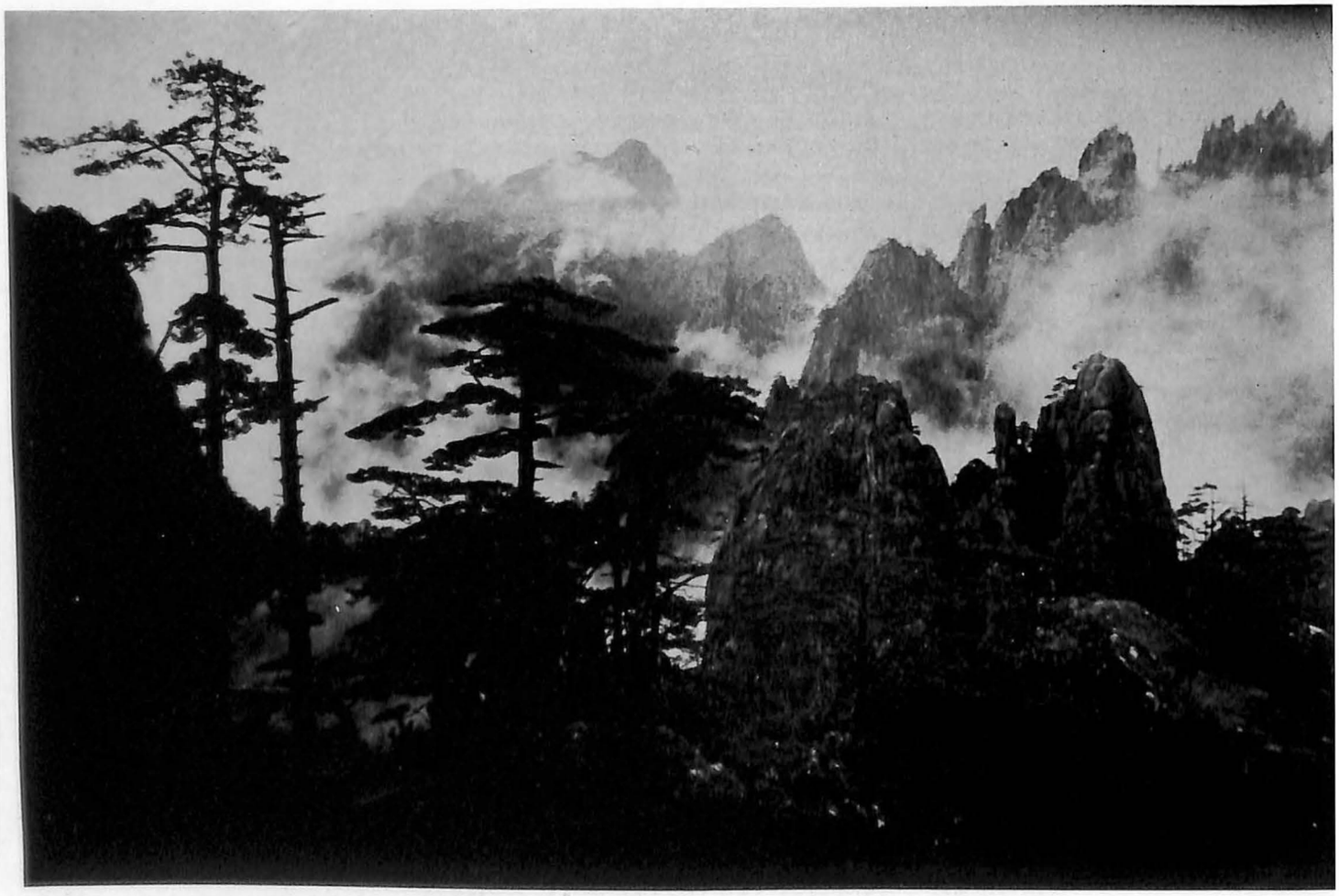
who are striving to find the means by which the spirit of their artistic heritage can be injected into the problems of humanity's present surroundings.
Taking the opportunity to study the country of Japan through the medium of landscape design, this book attempts to use 'case-studies' taken from Japan itself to illustrate each of several aspects from the main theme of LANDSCAPE AND HUMAN LIFE. As can be seen from the contents list, this theme is expanded into many facets; each section dealing with a particular point at which landscape and humanity meet.
This is the third book produced as the outcome of an IFLA congress. The first two, by the same publisher, were:

SPACE FOR LIVING 1961

SHAPING TOMORROW'S LANDSCAPE (2 vols.) 1964

The next book is expected to follow the 10th Congress in Stuttgart, Germany in 1966.
* Credit: from an article by Gyorgy Kepes 'The visual Arts and the Sciences: a Proposal for Collaboration' in Architectural Record, USA. May 1965.

contents



A

A
Photograph of the Huangshan Mountains of China.
B
'Threshold of Heaven' — painting of the Huangshan Mountains, China, by Lo Ming.

Japanese landscape design was influenced by the mountain scenery of China — not directly, but through the atmospheric paintings of Chinese artists in scenes such as that adjoining. These paintings were thought to be largely imaginative until photographs of the fantastic mountains of Huangshan came into circulation.

B

Landscape and agriculture

DR. KONRAD BUCHWALD

Rural landscape in evolution

Konrad Buchwald, professor of landscape management; studied botany, soil science and geography at University of Heidelberg and received Doctorate. Became Director of Landscape Management and Nature Conservancy for Southern Germany; lecturer in landscape and ecology at Tübingen University. Recently Director, Department of Landscape Management and Nature Conservation at Technical University of Hanover; leading member of the 'Green Faculty' of Hanover.

The process of transformation, to which the countryside is today, particularly subject, is world-wide. Although trends in most parts of the world are similar, there are, nevertheless, strong regional differences, based on ecological considerations, and corresponding to widely differing social and economic development. It is therefore necessary to specify the particular area which is being considered, and although, in this paper, it is the Federal Republic of Germany which is the subject, many parallel developments may be recognised in other countries.

For some 180 years the peoples of Europe have been subject to an extensive economic, social, and intellectual process of transformation which we call the change from the agricultural to the industrial society. This change, in the economic and social structure has resulted, at the same time, in a re-shaping of living space and of the landscape, to an extent hardly known before. Neither process has yet come to an end. Their significance for man's existence in a world growing ever more crowded, compels us not to leave these processes the free play of power or the dictum of 'might is right', but to control and guide them with the greatest sense of responsibility.

SOCIO-ECONOMIC CHANGES

In Germany (considering the area of the country as in 1938) the proportion of the total population engaged in agriculture has fallen in the following degree:

1800	70 — 80%
1850	65%
1880	40%
1939	18%
1960	15%

In 1965 the distribution of workers in the Federal Republic can be reckoned to be:

Industry	35%
Provision services	52%
Agriculture and forestry	13%

In the period 1949 to 1960 some two million workers left agriculture and forestry for other work. However, while in the period 1950 — 1962 the actual number of agricultural workers fell by 42%, the output per farm labourer rose by 136%. This increased productivity, which compares with only 79% increase in industry, is largely due to mechanization. Machinery on the land is compensating for the shortage of workers. The number of tractors, for instance, increased fourfold in 11 years, while the number of combined harvesters was multiplied thirtysix times in the same period.

The increase in size of fields to make such mechanization economical, and the consequent loss or merger of small holdings has been the factor having the greatest effect on the agrarian landscape. In the Federal Republic, clear evidence of this tendency is discernable in the changing structure of agriculture, measured by the number of holdings of each size. In the twelve years from 1949 to 1960

363,900 small holdings (under 10 hectares) *disappeared*

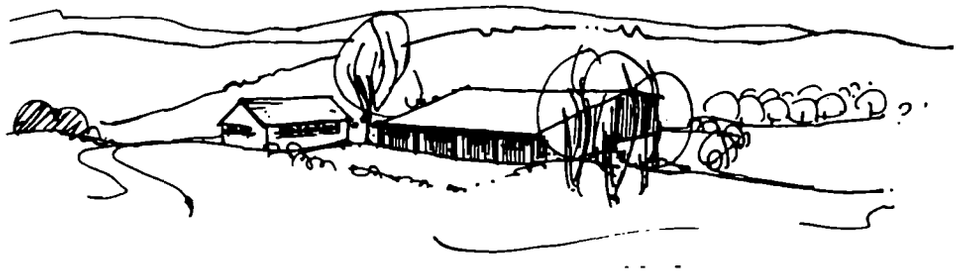
40,700 medium and large holdings (10 to 100 hectares) *came into being*

400 holdings over 100 hectares *disappeared*

A decisive factor is that the medium-sized holdings, worked by families, have not only maintained their numbers, but by expanding at the expense of abandoned small holdings, have even increased in numbers. Up to the present therefore, this middle size of holding has proved itself to be economically viable. Under Central European conditions, at least, this is favoured by two factors:

1 The local ecological variations inhibit the development of very large scale 'prairie' farming, and require a diversified land utilisation and soil conservation policy, based on local conditions.

2 The number of labourers at the disposal



1

1
Resettled modern farm on the terrace of a slope.
2
Hamlet-settlement with trees, on a pattern which follows the relief of the landscape.

of agricultural families sets limits to the size of holdings.
It becomes clear that the difficult dual task of Central European agriculture — maintenance of soil fertility — achieving a high productivity of land, labour and capital — is best realized by holdings of medium and large size (max. 100 hectares) which suit the nature of the land and the constitution and size of families.
Only the future will show to what extent concentration on a co-operative basis and division of labour — perhaps in some form of Central European productive association — might prove favourable and prevail.
Only a proportion of those who abandon agriculture depart from the village. Some remain living in the village as commutors, or carry on their new occupation in the same village. There are only few country parishes at the present day, which have a predominantly farming population. Even the smallest farming villages have a population in which, on average not more than half are agricultural workers.
The village itself is no longer the village of the farmers. Its change of character is expressed in its architectural appearance. Model building plans are needed to cope with its new role.

CHANGES IN THE LANDSCAPE

These changes in social and economic structure, from a spatial aspect, go hand-in-hand with the dual process of concentration of large masses of population in a few urban industrial areas, and the de-population of wide areas of the countryside. This is illustrated by statistics of the German population:
At about 1800, some 75% of the population lived in country parishes of up to 2000 inhabitants.
In 1960 only 23% were living in parishes of up to 2000 inhabitants.
This clearly shows the depopulation of country districts, and the resulting concentration in urban areas, increasing in intensity after the Second World War, confirms this trend.
The inhabitants of the 9 conurbations in the Federal Republic in 1956 comprised 42.9% of the population, and they lived on only 13% of the land. This represents a density of 6,734 persons per square mile (2,600 to the sq. km) while the agricultural areas have a density of only 233 to the square mile (90 per sq. km).
At the same time the agricultural areas suffered a decline in economic strength and welfare at the expense of the urban zones, to the extent that, in Germany today many of the agricultural zones are distressed areas, 'problem' areas, areas in need of assistance, or at least 'dormant' areas.
During the past 10 years, in Germany, approximately 100 sq. miles (or 260 sq. km) of agricultural land — an area equivalent to the city of Munich — have been lost annually to building estates, industrial building and road construction. This loss of agricultural and forest land has been partly — but only partly — made good by land reclamation.
Unfortunately — as in many countries — it is some of the most fertile and productive land which has been built over.
On the other side, the depopulation of the countryside, and the abandonment of over a third of the one million small holdings in many rural areas have not only led to the expansion of medium sized farms, but very often to the land being out of use or lying fallow. More and more land is going out of use or going over to forestry, over wide areas. Considerable portions of productive agricultural land have passed into the town ownership of people to be used as weekend allotments. The break-up, sale, and dissipation by settlements of the finest rural land is a problem not yet solved in the Federal Republic.
Another factor not so far mentioned is, of course, the intensive farming methods now being developed, including rapid farm mechanization, which favour the transition from small to large-sized holdings so that fields large enough to be farmed by machine are created.

THE AIMS OF PLANNING AND DEVELOPMENT DURING THE LAST DECADE

The direction of this development away from rural areas cannot be let alone. It must rather be guided in the interest of the populace as a whole, as also of the entire economy. The aims of town and country planning for the Federal Republic are therefore:

a A reduction in the decline of the economic and social structure of the Republic between areas of urban concentration and agricultural zones.
b A reduction in the further growth of conurbations, and, in support of this, development of a decentralised system of land settlement.
c Development of rural areas by improvements of the land.
d Preservation of large recreational areas, also in the vicinity of the urban concentrations.

In 'development of the rural areas' we cannot regard rural areas in isolation, rather must we look at the town-country relationship as a whole. The country fulfils many tasks for the town, but the town is also indispensable for the country. What is taking place in the country at the present time must also be understood as urbanisation and industrialisation, though in special ways. All *country planning* is, therefore, more or less the planning of the town-country relationship. The aims, therefore, to be striven for in rural areas are:

1 Improvement of the agricultural structure with, *inter alia*, merger of land holdings
Evacuation of farms and expansion of others

2

Revival of villages and reorganisation of old farms
Extension of the network of rural roads
Improvement of ecological conditions

2 Maintenance of the soil fertility of cultivated land and the acquisition of fresh land for cultivation, with, *inter alia*, the optimum management of water supplies
Soil and water conservation
Windbreaks and other environmental improvements

3 Fundamental premise: provision by public authorities of the basic means for improvement of rural areas.

4 Mechanization of rural areas.

5 Promotion of recreational facilities and tourist traffic in rural areas.

Many of these improvements have been under way in the past 10 years, including:

- a considerable degree of merging into land holdings
- 12,000 resettlement farms newly established in the Federal Republic since 1956
- an annual programme of 10,000 kilometers of newly built or newly surfaced rural roads

All these are measures which change the landscape. They not only change the scenery and composition of the landscape, but also its ecology.

The rural areas, in future will have to fulfil tasks of a greater variety and more exacting nature. They must fulfil at the same time the following four commitments:

a provide a workshop for food production

b provide the location for rural trades and a certain amount of decentralized industry

c act as the residential area for the rural population, and also for a large section of the non-rural population.

d form a recreational area for the urban industrial population.

The danger is great, that in taking a short-sighted view, only economic considerations will be taken into account. Then, not only are the layout and appearance of the villages neglected, but the beauty and the whole biological potential of the landscape. The training of farmers and technicians, even today, does not equip them, in most cases, to recognise the ecological and constructional problems of the transformation of the landscape. They are thus likely to carry out plans for the merger of land holdings from a purely economic and mechanistic point of view. They forget that rural areas are the home not only of future generations of farmers, but also should be living space for many non-agricultural people and a recreational area of the urban-industrial population. The changing composition of the village requires thorough planning for its reorganisation and the sensible incorporation of the settlements of non-agricultural inhabitants. The merger of broken-up agricultural properties is frequently carried out without reference to the fertility of the countryside, its biological wealth and its beauty. Only with the co-operation of landscape-architects trained in ecology can the necessary synthesis between economic and ecological requirements be here attained.

LANDSCAPE PLANNING AND LANDSCAPE MANAGEMENT IN THE CHANGING COUNTRYSIDE

These numerous problems can only be solved by long-term, prudent planning co-ordinated with the various departments concerned and carried out in the spirit of an integral development of the countryside. More or less successful attempts of this nature are, for example: the reconstruction of the Dutch polders, the Italian 'bonifica integrale' or the 'Plan Nord' of North Schleswig.

All these measures require in the biological and ecological sphere the timely and whole-hearted co-operation of the landscape-architect. In this regard the

* 'The Green Charter of Mainau' was published in 1961 by the German Horticultural Society, and warns against damage to the countryside and pollution of the ground, water and air, as a danger to health.

'Green Charter of Mainau'* states:
"For the sake of mankind the building up and safeguarding of a sound countryside for residential and recreational purposes, and for agriculture and industry, is indispensable. The demand must therefore be made: . . . . . the safe-guarding and building up of an agriculture of lasting fertility and of an ordered rural settlement".

The use of landscape plans as the planning media of the landscape architect is essential. The landscape plan ('Landschaftsplan') has been developed in the last three decades, at first with the name 'Landschaftspflegeplan' (Landscape-culture-plan). Parallel developments in landscape planning are known to us from the Anglo-Saxon countries, from the former British Colonial territories of Africa, with areas of considerable soil erosion, drought, and destruction of vegetation, and from the Netherlands. The term 'land-use plan' has been used, but it is too narrowly associated with merely economic studies, and is not broad enough in meaning for the purpose. In agreement with German landscape architects, the term 'Landschaftsplan' will be used in future.

The purpose behind the use of the landcape as a planning medium is to form an environment which is in accord with nature, while at the same time becoming adapted to man's requirements. In other words — a balance between the natural potential and the demands of society for living space.

The landscape plan must therefore do justice to this task in content, form, and in the time factor. The preparation of such a landscape plan is divided into two parts:

A Landscape analysis and diagnosis

B Landscape development planning.

It is put into effect by

C Landscape management measures, and nature conservation.

In landscape analysis appreciation of the

condition of the landscape and of landscape ecology is dealt with. Landscape diagnosis gives an opinion and the measures to be adopted for landscape planning. Both have reference to the natural or human-induced capacity of the landscape (natural potential), as well as to all that man has contributed to the landscape (economic and social organisation). Landscape planning, as development planning, builds on analysis and diagnosis.

The following planning schedule is used for landscape planning: (The list here given makes no claim to completeness, nor is it intended that all investigations or measures are necessary for each case. The main emphasis will also vary from case to case.)

A LANDSCAPE ANALYSIS AND DIAGNOSIS
(appreciating the condition and giving an opinion)

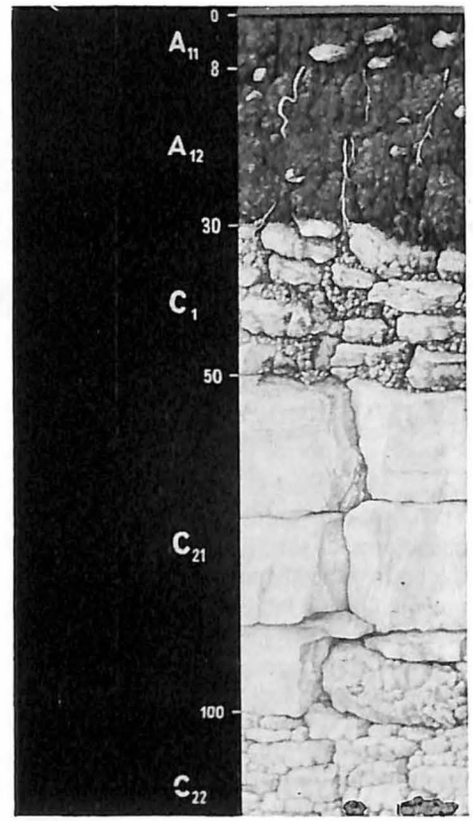
a *Nature of the land and natural potential*

1 Geological structure, surface contour, deposits
2 Soils
- 2.0 Nature and type of soil
- 2.1 Estimate of soil, soil survey

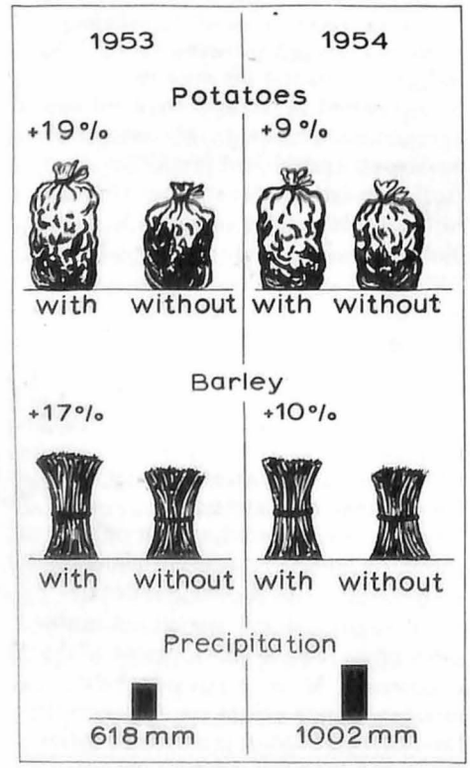
3 Hydrological condition
- 3.0 Surface water
- 3.1 Subsoil water supply
- 3.2 Quality of water

4 Climatic conditions
- 4.0 Precipitation
- 4.1 Temperatures
- 4.2 Direction and strength of wind
- 4.3 Micro-climatic conditions for sections of landscape of planning importance, or of test areas
- 4.4 Phenological data (relation of climate to periodic biological phenomena — e.g. breeding and fruiting times)

5 Vegetation
- 5.0 Potential vegetation (Present vegetation of the natural landscape)
- 5.1 Real vegetation (Present vegetation of the cultivated landscape)



3
Rendzina soil of Jurassic limestone, often flattened by erosion.



4
Fields of potatoes, barley and corn during a dry year (1953), and a wet year (1954) on Rendzina soils, with and without the protection of windbreaks.

- 5.2 Presence of protected species and plant communities, and those worthy of protection

6 Animal world
- 6.0 Fauna and animal communities
- 6.1 Presence of protected species and those worthy of protection

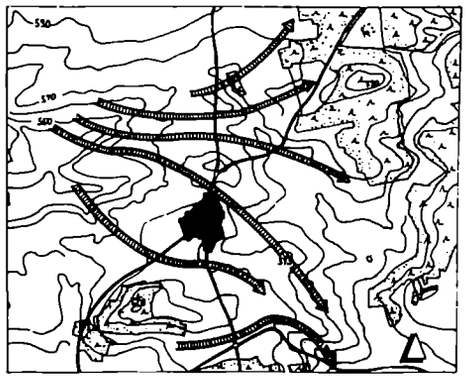
7 Landscape pattern (Division of landscape according to spatial and ecological factors); natural potential.

8 Landscape damage
- 8.0 Erosion damage
- 8.1 Deflation damage
- 8.2 Drought damage (excl. 8.3)
- 8.3 Damage by subsidence of subsoil water or water damage
- 8.4 Flood damage
- 8.5 Water pollution
- 8.6 Frost damage
- 8.7 Damage by waste gases, smoke and dust
- 8.8 Waste dumps, extraction sites
- 8.9 Zones of noise nuisance

b *Social structure and social potential*
(Demands made by society on nature of the land)

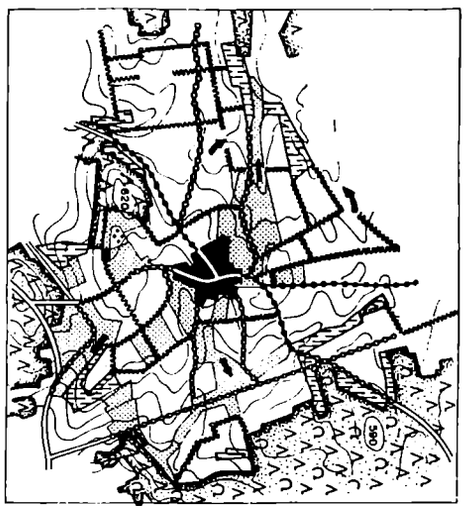
1 Present utilisation of land
- 1.0 Woods and forests
- 1.1 Agricultural land
- 1.2 Horticultural use
- 1.3 Recreational areas (excl. 1.4 and urban green spaces)
- 1.4 Natural monuments, nature reserves, conservation areas, National parks
- 1.5 Cultural, historic and prehistoric monuments
- 1.6 Built-up areas
- 1.7 Industrial areas
- 1.8 Mining areas
- 1.9 Transportation facilities, density of traffic

2 Present state of ownership
3 Projected and necessary changes in utilisation and structure.
(To this belong, inter alia, all measures for improving the composition of agriculture, for the maintenance and improvement of soil fertility, as well as the acquisition of fresh land for cultivation,



5
Prevailing wind directions in the district of Ohmenheim, Swabian Alb.

6
Ideal system of wind protection in the district of Ohmenheim.



7
Landscape-plan for the district of Ohmenheim

- **Forest**
- **Reforestation**
- **Pastures and meadows**
- **Village**
- **Orchards**
- **Planting of windbreaks**
- **Existing trees on roads**
- **Proposed trees on roads**
- **Opening for air outlet**

for the provision by public authorities of the basic means for improvement of rural areas, for industrial settlement and for the promotion of recreational use and tourist traffic.)

c *Opinion as to potential and future development of the countryside*

B LANDSCAPE PLANNING DEVELOPMENT PLANNING (Landschaftsplanung)

a *Planning in agricultural and recreational areas*

1.0 Reorganisation of village lands; plan of roads and paths
1.1 Local development and design, evacuation; contribution of landscape planning to utilisation plan and town planning for the area
1.2 Irrigation and drainage, other land improvements
1.3 Windbreaks, planting of trees, planting of hedges
1.4 Road construction and planting, bank protection
1.5 Waterways and planting, bank protection
1.6 Afforestation
1.7 Reorganisation of dumps and extraction sites
1.8 Water purification
1.9 New natural monuments, nature reserves, conservation areas, National Parks
2.0 Protection of cultural, historic and prehistoric monuments
2.1 Recreational facilities such as camping sites, swimming pools and parking places; meadows for rest and leisure; holiday villages, youth hostels, shelters, motor-free zones, etc.

b *Planning in residential and industrial areas*

1.0 Contributions to the total concept of land utilisation plan and town planning from the standpoint of landscape management
1.1. Zones of rest, pedestrian areas, gardens, public green spaces, public grounds, display gardens, cemeteries, recreational woods, green belts, etc.
1.2 Recreational facilities close to towns
1.3 New natural monuments, nature reserves, conservation areas, National parks
1.4 Protection of cultural, historic and prehistoric monuments
1.5 Contributions towards the maintenance of purity of air, water and soil in the planning area from the standpoint of landscape management.
1.6 Planting for the improvement of urban atmosphere as protection against dust and noise
1.7 Waterways and roadways and their planting, other planting
1.8 Reorganisation of garbage sites, dumps and industrial areas.

EXAMPLE OF A LANDSCAPE PLAN

In order to render the use of a landscape plan more understandable in practice, let us take one of the agricultural problem areas, a decidedly 'dormant area': a south-west German highland area, the north-eastern part of the Swabian Alb (Härdtsfeld). This landscape plan was worked out in the course of the planning work of the Landesstelle für Naturschutz und Landschaftspflege Baden-Württemberg (Office of the Nature Conservancy and Landscape Management) by my former colleague G. Kuder and myself in the years 1957/59. The work was commissioned by the Landesamt für Flurbereinigung und Siedlung (Office for the Merger of Land Holdings and Settlement) in agreement with the appropriate rural district councils (Landkreise). Collaborating in the socio-economic part of the development planning was the engineer for the appropriate merger area, the representative of the Agricultural Office (Landwirtschaftsamt), charged with the agricultural preplanning, representatives of the Forestry Office (Forstamt) of the Waterworks and Road Construction Office (Wasserwirtschafts- und Strassenbauamt).

a SITUATION, NATURAL POTENTIAL, LANDSCAPE DAMAGE

Härdtsfeld is the eastern part of the Swabian Alb. The planning area comprises a total area of some 375 sq.km. in the districts of Aalen and Heidenheim. At an elevation of 450—700 m with widespread white jurassic limestone bearing a marked appearance of devastation and a high proportion of calcareous brown clay and Rendzina soils, flattened in the main, by erosion, as well as a raw, windy continental climate, Härdtsfeld belongs to the handicapped agricultural areas of the rural economy of south-west Germany. Landscape damage, such as the widespread erosion, the progressive devastation, very similar to that of the Karst of Yugoslavia, the reduction and uncertainty of yields through drying and cold winds in the cleaned-out agricultural areas of the plateau considerably reduce the potential of the landscape.

b AGRICULTURAL STRUCTURE, BASIC MEANS OF PUBLIC BODIES, ECONOMIC POSITION

In addition to the disadvantages in natural conditions of production, there are unfavourable agricultural circumstances of a structural nature (break-up of properties, 50% of all holdings under the size needed to maintain a family), inadequate communications by road and rail and insufficiently interspersed with industry and trade (only 700 industrial jobs with a population of 15.000; percentage of employed inhabitants 4.7). This has for long had an effect on the economic position of the area in the high indebtedness of the parishes, increasing number of departures from the area and the consequent decrease of population in spite of the high birth rate. As 'dormant area' in the meaning of the memorandum of the Institut für Raumforschung, Bad Godesberg, 1954, it belongs to the areas in need of economic aid and is, at the same time, the focal point of the merger of land holdings. The contribution of landscape planning and landscape management to the improvement in the conditions of cultivation, and yields and to the improvement of the agricultural structure and, in the main, to consist in an improvement in the landscape ecology, as well as in suggestions for the reorganisation of ground utilisation, taking into account the appearance of the landscape.

c BASIC INVESTIGATIONS AND PLANNING DOCUMENTS

1 Map of areas and types of soil.
2 Map of dry valleys and karstic-sources as an indication of the devastation. As a result of the widespread and progressive devastation, the planning area is mostly without surface water, most valleys are dry valleys. The water level is at a depth of about 200 m.
3 Vegetation map of the forests.
4 A map of the waste land (sheep pasture), showing the plant-communities and nature of the soil, in order to be able to decide their future use. Future use: afforestation, sheep pasture, breaking up for arable land.
5 Map of a test area showing micro-climatic conditions as the basis of a wind-protection-scheme.
6 Four-year experiments on the effect of hedges and artificial wind breaks on micro-climatic conditions and agricultural yield on Rendzina soils (flat ground of weathered limestone, A/C profiles).
7 Expert advice on measures to combat widespread erosion.

d PROPOSALS OF THE LANDSCAPE PLAN

1 Optimum use of waste land by afforestation (as a contribution to the improvement in local climatic conditions and as protection against erosion) and by sheep pasture on locations where there are adequate connected areas for early pasture.
2 Windbreaks for the improvement of growing conditions
3 Various protective measures against erosion
4 Road planting
5 Opening up the landscape by pedestrian ways, creation of rest and view points, incorporation of historic roads in the network of pedestrian ways.
6 Reorganisation of villages, in particular of local boundaries, of new building areas and of diversion roads.
7 Other measures for landscape management, such as planting of trees, planting by streams, improvement in local climatic conditions.

The planning proposals were shown on 3 separate plans giving a general layout to a scale of 1 = 10,000, with written report, maps and sketches.

The legal basis for the planning and execution of the work included the 'Law for the Merger of Land holdings, 1953'; a Decree of the Office for the merger of Landholdings and Settlement of Baden-Württemberg 1955 concerning co-operation of the Office of the Nature Conservancy and Landscape-Management in the measures for the merger of land holdings. Also the law for the Preservation of Nature 1935, and a law of Baden-Württemberg supplementing and amending it, 1959.

Carrying out the proposed measures involved some preparation in the drawing up of a plan for landscape management, with an estimate of cost; the pre-planning of new proposals for agriculture, water supply and forestry, as well as obtaining agreement with the initial draft of the road and waterways plan. At an early stage, meetings were held with the inhabitants of the area, particularly the farmers involved, to explain the proposals.

The final plan drawn up for the merger of the land holdings integrated the roads and waterways plan, layouts for communal and public areas, and the proposed and accepted measures for Landscape management. This plan received the

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The climate of the highlands of the Swabian Alb is windy and continental with long-lasting snowy winters.

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Highland area of the Swabian Alb with poor pastures for sheep grazing. In the background groups of Juniperus communis and beech forests.

10
Soil erosion is widespread, mainly in the Spring during the thaw.

approval of the higher authority for land mergers.

In addition to the landscape plan, planting plans and location plans, as well as a careful time schedule for the operations were necessary. This was followed by the setting out on site and actual planting operations.

In the example, here dealt with, of an agricultural 'dormant area', of the German highlands, only a few of the problems requiring the co-operation of the landscape architect in rural areas, have been touched upon. There are many other problems, some of which can be briefly mentioned.

Highly intensive farming methods on the most fertile agricultural land of clay, loess and deep black earth soils may lead to an undesirable result. Migration of smaller farmers combined with the intensification and mechanization of agriculture has resulted in the complete clearance of trees and bushes, with consequent biological impoverishment, and the creation of a 'cultivation-steppe' If these areas are not to become, and remain purely 'tractor landscapes', the landscape architect must get to work creatively upon them.

Some rural areas have been disturbed or even completely changed by large scale engineering operations, such as the drying out of river beds following hydraulic or electric power installations which have lowered the water table; or open cast and lignite mining operations. Fertile agricultural land is often destroyed in such ways, and means must be found to achieve the ecological recovery of the district.

While the single farm located within its own boundaries was first established to avoid long access roads, the present-day trend is towards the hamlet settlements and perhaps in a short space of time, as a sign of the co-operative movement (production co-operatives), larger settlement groups will again be favoured. With

The rural landscape and climate of Japan

the resettlement there is linked the question of reorganising what is left of the villages.

Problems are raised by the introduction of industrial settlements near to farming villages, and by the settlement of non-agrarian populations in or near country villages. The integration of such developments into the countryside is a landscape design problem.

Through the decrease in numbers and change of employment of mountain peasantry the highlands and Alps face a possible landscape transformation which must be anticipated and planned for. The migration of mountain farmers to central locations leads to the abandonment of areas formerly under cultivation and their afforestation. A number of the mountain farmers will become 'recreation farmers' ('Erholungsbauern'). With an increasing tourist traffic this postulates a more active rebuilding and new building work, which must be properly planned, as also the necessity for safeguarding and developing large recreational areas with all necessary facilities (landscape preservation, national parks, road construction, pedestrian ways, parking sites, camping sites, bathing facilities, cable railways, ski lifts, inns, etc.).

The era of the industrial society in all its present-day manifestation is characterised by a change in structure and use embracing and affecting the entire living space, as well as by an alarming misuse and consumption of the healthy and health-giving landscape. Virtually all countries on earth are confronted with the task of transforming the countryside on the largest possible scale. This is particularly the case in rural areas. These, in particular, require long-term, prudent development planning, and its execution. The landscape architect has a decisive contribution to make to this end.

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Hisato Ide, landscape architect. Graduated from the University of Tokyo, Faculty of Agriculture, and obtained Master's Degree in Agriculture. Member of the Japanese Institute of Landscape Architects; Member of the City Planning Institute of Japan; Member of the Architectural Institute of Japan; Member of the Ecological Society of Japan. At present Assistant at the University of Tokyo, Faculty of Agriculture, Department of Agrobiology, Course of Landscape Architecture. At present studying the landscape planning for polders in Japan. Winner of the Ishikawa Prize of the City Planning Institute of Japan for 1965.

1 NATURAL LANDSCAPE AND CLIMATE BY MICHIO SAKATO

For an understanding of the correlation, past and present, between nature and landscape architecture, it is necessary to have a basic knowledge of the natural features and climate of a region. This knowledge can be obtained by an analysis, from the natural geographic standpoint, of the configuration of the land, geology, climate, flora and the like, and also of the interaction between these factors. At the same time it will be necessary, from the environmental standpoint, to clarify the relations that exist between natural features and man, how they act on him and human society, and how man reacts to his natural environment. In landscape design, which is specifically an art in which man transforms and constructs the space of nature so as to reproduce a social image best adaptable to the natural environment, the difficult philosophical problems of man's perception and understanding of nature, as well as his response to nature, will have to be solved. Moreover we must trace these problems through literature back to the past, so that we may be able to find out how our forebears acted in relation to nature; how they responded to it; how they enjoyed it.

In general it is believed that, owing to the characteristic natural features in Japan, and their mode of life, the Japanese have feelings very well harmonized with nature. In fact, Japanese arts and culture have developed under the strong influence of the country's natural features. The national character of the Japanese has also been formed under their influence, so that the adaptability and submission to nature are mainly attributable to the influence of the climate and land of Japan. No doubt Western philosophy has contributed to the pursuit of nature's rational truth by objective observation and scientific analysis, but the subjective view of nature is believed to be exclusively inherent in the Japanese, and it has

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A coastal strip in Niigata Prefecture showing variation in pattern of rural landscape, — the coast edge being the tight pattern of villages subject to typhoons.

developed from a simple feeling towards nature, into a kind of religious view of it, down from olden times to the present. An instance of such a view of nature may be found in the serene environment of the forest around a shrine.

From the outset of the development of traditional Japanese gardens, scenic views were taken into them on a small scale. This technique achieved a unique brilliance of development. When we study such gardens, we begin to wonder what was the scenic image which our forebears had cherished when they built gardens. Students of Japanese garden history answer this question by citing the sea views of the inland archipelago of Seto, and the views of mountains and valleys in the neighbourhood of Kyoto. So the original features of the landscape can be considered as the natural environment which fostered Japanese culture.

The first prerequisite for an understanding of Japanese landscape design, as well as Japanese culture in general, is the feeling for the four seasons. The climatic characteristics of the four seasons in Japan are so complicated and delicate that they are rarely parallelled in any other parts of the world. The causes lie in the complicated topography of the Japanese Islands, the crossing of the warm and cold ocean currents and the climatic influences coming from the continent. According to the Saijiki, a commentary of seventeen-syllable verses, the four seasons are divided into as many as 72 sub-seasons. This shows astonishingly keen sensitivity to the seasons by our forefathers, who put their keen feelings into literature. The sensitivity towards the seasons and the beauty of surrounding nature were closely combined, and found literary expression in terms like *spring rain, spring mist, hazy vernal moon, rainy season, dew, breeze in the pine trees, the hottest doyo season, harvest moon, chirping autumn insects, red maple leaves, autumn shower, snowy view* and the like. These phrases were freely

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used, and thereby the feelings of the Japanese for nature were often aroused. As K. Kaneko pointed out at the Amsterdam congress 1960 (Space for Living p. 86), these feelings towards nature have accumulated and crystallized during the long history of this secluded sea-girt country. People therefore have produced the nation's 'resonance box'; that is, they respond to the beauty of nature in one and the same way. This is peculiar to the Japanese, and they have handed down this peculiarity from generation to generation. It is therefore entrenched in the core of the Japanese people today.
The moderate but complicated natural features of Japan have exercised an influence on the architecture of dwelling houses. The construction with verandahs, paper screens, and tatami (mats) was introduced to connect the interior with the open air, and so-called *Japanese things* such as kimono, geta, kasa, and so on may be understood in connection with the natural characteristics of the land. Flower arrangement, the tea ceremony, Japanese music, dancing, and other arts, which are closely related to Japanese garden design may be understood in this same sense.
Our forebears had certain definite scenic images. For instance, from the earliest times, Miyajima, Ama-no-hashidate and Matsushima have been named as the 'three noted views of Japan'. One or two of them may be second-rate or even third-rate views today. At the time however, they were accessible scenic spots with a scarcity value. For ages Mount Fuji was adored as a celebrated and sacred mountain. There are many other scenic spots that were made the subject of *waka* or 31-syllable odes. Many of these we copied in famous Japanese gardens on a reduced scale or in a debased style.
In spite of the apparent emphasis on the peaceful and gentle phases of nature by our forebears, they must all — even the ruling classes — have lived in fear of

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Volcanic caldera in Kirishima National Park; Kyushu, Southern Japan.
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Beautifully cultivated terraces are among the familiar landscape patterns in Japan. The terracing of hillsides is essential in Japan where only 16 per cent of the land is arable.
14
Typical agricultural pattern of small farms with mixed cultivation of rice, paddy and tea.

typhoons, which are very characteristic of Japan, and they must have lamented their sad fate in being tormented by yearly floods. According to some opinions the irrational sense of resignation which is inherent in the mentality of the Japanese, may be a product of the long history of natural calamities which have ravaged the country.

We observe scenic views in Japan through the filter of contemporary sciences, and pursue their special features from a world-wide standpoint. At the same time we observe the beauty of nature from the 'resonance box' which is traditional to the Japanese and echoes the same sense of beauty, and the same appreciation of beautiful views which often becomes unconsciously identical for all the people. This is due to the double structure of the mentality of contemporary Japanese, who observe the beauty of nature not only from the nationwide angle, but also from the world-wide viewpoint. They discover qualitative beauty and its patterns not only in the macro-scopic, broad landscape views, but also in microscopic views of nature. We must briefly refer to the characteristics of Japan's topography, geology, climate and flora:

As can be clearly seen from maps, the main topographical characteristic of the Japanese islands is the spine formed by the chains of mountains as high as 6,000 to 10,000 feet (2,000 to 3,000 meters). Many of these are volcanic, some still active. As would be expected the geological basis of the country is igneous rock, largely granite and granitic rocks. Not all the mountains are rugged, much of the mountain scenery is soft and gentle and interrupted by high level lakes. Waterfalls are frequent, and rivers short and vigorous, with the consequence that they run from sheer gorges into fast streams with rapids. When a rainy typhoon comes, devastating floods will often cause disastrous damage in the lower reaches of the rivers.

These rapid streams and rivers, which may at any time flood, are indispensable sources of water, in mild seasons, for the cultivation of rice. In the history of Japan there are many tragic records of bad harvest due to drought.

The soil which has been washed down from the mountains over many centuries is deep and workable, but not, except along the banks of rivers, very fertile. Over 40% of the population are engaged in agriculture, which is still Japan's most important industry. However because of the narrow width of the islands and mountainous nature, only about $^1/_8$th of the area of the country is suitable for cultivation. In addition to rice, which is not only the national food, but the basis of the national drink, sake, other main crops grown are wheat, barley, rye, tobacco and tea.

The shortage of grazing land limits the breeding of livestock, and the smaller animals sheep, pigs and goats are increasing in proportion to cows.

Rice is the principal crop, and, needing flooding and drainage for its production has resulted in the terracing of slopes for small fields with characteristic bund walls to retain the water. Holdings are generally small and the further break-up of large estates since the war has increased the proportion of small holdings.

Rural views in the countryside show the result of the climatic conditions and the need for irrigation. Many small reservoirs, as well as the construction of dams for multifarious purposes demonstrate the relations existing between the utilization and conservation of the land, and the climatic conditions.

The climate varies from one part of Japan to another due to the difference in latitude from North to South of the islands and it is a typically complicated oceanic climate. In general Japan has short, hot, bright, moisture laden summers and short, cold, fine winters. There is a rainy season in early summer and heavy snowfalls in winter particularly in the mountains, but rarely is there an intensive frost. Although the climate is pleasantly temperate and bright skies are usual, even in winter, the islands are on the fringe of the monsoon belt, so that summer heat is accompanied by high humidity. Mist and fogs are prevalent even during summer, and there is always the ever-present risk of typhoon, tidal wave, earthquake or volcanic eruption.

The flora growing in such climatic and topographic conditions and natural features is so full of variety that it has helped to add small-scale variety to the landscape throughout the country. Apart from Hokkaido and the mountainous regions, Japan has a rich variety of flora. Oaks, Walnut, Birch, Chestnut, Camphor-trees, Zelkowa grow freely, while among the conifers are picturesque Pines and magnificent Cryptomeria woods. Weeping willow, clumps of bamboo and the many forms and colours of the maples add variety while the smaller Japanese flowering trees — cherry, plum, peach, pear, azaleas and camellias are world-known.

Floriculture which was developed during the Edo era (1615—1867) was influenced by the Japanese appreciative capacity for beauty in natural features. Japanese chrysanthemums are well-known all over the world. The development of a technique to control the sizes and forms of garden trees when our image of a natural view is to be introduced into a garden, should be seen as also relevant to the natural features of the countryside.

In large landscaping plans — regional plans, those for the conservation of nature and maintenance of beautiful landscape — the future will place enormous tasks before landscape architects.

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The 'paddy' fields known as 'haza' in the Niigata Prefecture. The trees which stand in water and later help to dry out the soil are Alnus japonica.
16
Tea plantation at Makinogahara in Shizuoka Prefecture. Country women wearing traditional cotton clothes busily engaged in gathering tea leaves.

2 NEW POLICIES

BY HISATO IDE

So long as landscape design is a formative art, we must be conscious of its relationship to tradition. To study tradition does not merely mean trying to produce a modern version of the things in the past. There must be an effort, under present conditions, to create things that are compatible with our 'life feelings'. Therefore it is neither in form, nor in style that tradition has a bearing upon creation. When tradition is partly denied in one's own mind in the process of creation, then it may be handed down with the possibility of future progress.

Today the superficial adoption of styles, including Japanese garden art has resulted in an anonymous uniformity in which we see no qualitative difference in the designs from American or European countries. For this reason, we would like to stress the need to re-examine the problem of locality which corresponds to landscape and climate and a feeling for nature. In Japan some landscape architects have gradually begun to tackle the problem. At present there appear to be three types of movement in this direction. The first one is aiming at things Japanese with the problem of tradition versus creation. The second can be referred to as 'avant-garde'. The third movement tries to digest Western influences and to employ them in a Japanese way.

The common purpose of all these three is the solution of the problem of how the art of arranging space in traditional gardens can be developed and utilized in city and national planning. Equally important is this in rural planning.

As the result of a policy to increase food production much reclaimed land has come into being in various areas throughout Japan, and the improvement of environment for farmers has become a matter for serious concern. It shows a lack of humanity that people have to live in a desert-like stretch of reclaimed land

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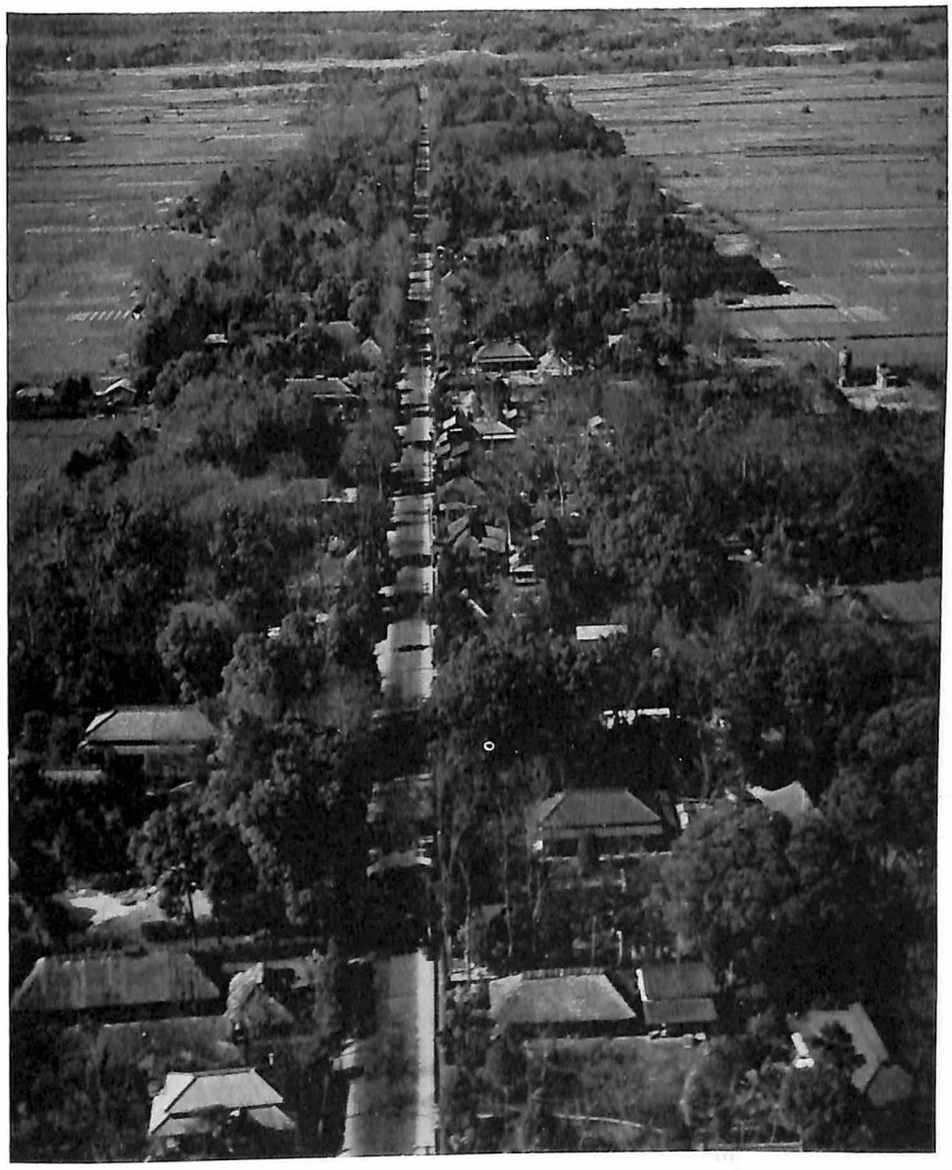

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Rural village strung along line of highway. Cohesive quality largely derived from density of trees (Zelkova serrata).
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The rainy season in Japan makes irrigation for rice cultivation possible. This photograph of rice seedbeds in the rainy season illustrates a typical rural landscape born out of the Japanese climate.

without trees. In constructing a new village on a broad area of reclaimed land, the authority must bear in mind that plans for rural areas should include landscape planning for the human environment, in line with the new farming system and its scale. However there lie some difficult problems concerned with protecting landscape and the farming industry due to the complicated situation over land formation, irrigation facilities and the effectiveness of land utilization compared with industrial areas. The landscape planning needs, related to land-formation projects will necessarily increase in the future. In this connection the Hachirogata lagoon reclamation project under way in Akita Prefecture is worthy of note as a test case.

With the expansion of human activities, in addition to economic problems, protection and conservation of nature has emerged as a matter of major importance. There has been much talk about the necessity of keeping a balance between protection of natural beauty and the economic use of land. To some degree, in Japan, we will have to face the danger of destruction of natural beauty which can be expected to result from the advance of construction machinery and the expansion of construction projects. Following an outstanding economic growth after the war, the demand for electric power has increased. As a result there is a rivalry between development of power resources and the protection of natural beauty, and — as in all countries — this has become a matter for serious discussion. For instance, where a dam has been built the surrounding area has lost its beautiful landscape of gorges; vegetation has changed, and the volume of running water has been reduced.

The first steps should be taken to establish harmony between enterprises of national importance and the protection of nature so as to minimize the destruction of natural beauty. At the same time it is also

necessary to design various recreational facilities which are likely to be built after the development of power resources, in such a way as to provide public facilities and yet protect natural beauty.
The construction enterprise is not the sole cause of the destruction of nature. Deforestation is another. The surfaces denuded of trees allow erosion which increases the disasters to which humanity is liable. The re-afforestation of such bare mountains may prevent disaster, increase the productivity of infertile lands and create scenic landscape. Many mountains in Japan suffered erosion after the war by the random felling of forest trees. In such areas the beauty of the landscape was also badly despoiled. Works of re-afforestation and erosion control are now being pushed forward in the mountain zone.
In discussing the question of progress and the protection of nature we must not overlook the tourist industry. In Japan the resources of the tourist industry have been turned towards places where the 'sight-seeing capitalists' are making an excessive profit. Most of the developments in this direction are therefore being organized by speculators who make a profit in the name of 'promotion of regional areas' or 'maintenance of environment'. This results in spoliation of landscapes in such places where scenic beauty is an important resource. This means that man himself is destroying the very natural features which are essential for his visual enjoyment and recreation. Some tourist attractions, such as the national parks are under the protection of laws which are unfortunately ineffective, because of the general lack of a basic intention to conserve nature.
Positive protection and preservation of nature *must* be included in the development plan from the very initiation of any form of regional planning.
These are some of the problems which we must face in the near future. It will be necessary to familiarize the younger generations who are to play an important role in landscape architecture in Japan, with these problems — to equip them with a stable landscape research organization — and to ensure them a sufficiently high social status so that they may fulfil their tasks.

Landscape and forestry

*C. A. CONNELL and others from ILA conference**

Forestry and landscape design

** An edited report of the paper given at the I.L.A. Conference, Bristol 1962, incorporating comments by other speakers and members of the discussion group.*

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Forestry is the growing of trees to provide an end product which will benefit both private enterprise and the State, and as such it is quite different from arboriculture, from growing trees in parkland, or to provide a sporting covert. It is the provision of a national asset, for wood is as much a necessity of life as water, wheat or iron ore. A country such as the United Kingdom spends a great deal each year of foreign currency in importing timber in one form or another — either 'in the round', — processed into baulks or timbers, — or in the form of pulp or timber by-products.

Britain imports 90% of its total consumption of wood, in all forms and only 10% is provided by home-grown resources. It has been governmental policy since 1920, that there should be an endeavour to produce much more than that 10%, and if possible to increase the figure to 33 or 35%, if that can be done within the pattern of a stable rural economy.

Originally, the Forestry Commission was given the task of producing timber for national use, and primarily for defence purposes. In fact, following on the desperate shortage of timber during the first World War, softwood production at any cost, was its only term of reference. Gradually, however the emphasis has altered from defence only, to a recognition of forestry as a national business. In the 42 years of its existence, the Forestry Commission, though only part way through its programme, has already made quite an impact. It is the largest landowner in the country — owning $2\frac{1}{2}$ million acres, of which 1.6 m acres is suitable for forestry, and 1.3 m acres has already been put under woodland.

Growth is continuing, with 60,000 acres per year being planted by the forest authority directly, and 40,000 acres per year by private enterprise assisted by financial grants from the State. The private component at the present is about $2\frac{1}{2}$ million acres, making a total currently available for business-like forestry of 4.1 million acres. This 4.1 m acres is 7.33% of the area of the country, which is a figure comparing very unfavourably with other countries. Belgium — a similar, small industrial country has $2\frac{1}{2}$ times as much, with 17% of its national area in managed woodlands. Even Holland has not such a low percentage, and Japan, which is small, heavily agricultural, and highly industrialized, has 2/3rds of its total area under forest. At the present rate of progress, Britain, which only had 5% 40 years ago, may, within two or three decades, get to a position of between 9 and 10% of the national area being under managed forest, and this, it is felt, is a stage where the proportion of forestry relative to agriculture, to urban development, and to recreational areas, is about right for the national economy.

One of the greatest arguments over the appearance of forestry plantations arises from the sight of single-specie stands of conifers. There is of course a great preponderance of requirement for coniferous timber — 94% in fact — and the Forestry Commission feels that it has a duty to go a long way to meet this demand. Therefore, at the present time, the development of woodland areas with hardwoods is only about 10% of the total of new planting, and this is primarily in the southern counties of England and Wales.

The need for conifers in bulk has dictated the main species that are grown. The most valuable tree and probably the most maligned, is the Sitka Spruce. Like most coniferous woodlands, Spruce plantations are pretty unpleasant to look at during their 'pole' stage — the 'pimply adolescent' period, which is when most people have seen them. However, some mature coniferous plantations are, we feel, not one bit less beautiful and attractive than the hardwood areas. They

*Since this paper was given, a landscape architect has been appointed as consultant to the Forestry Commission.

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An early example of Forestry Commission work showing rectangular compartments with straight rides. Now considered to be a bad layout from both forestry and amenity point of view; Radnor, Wales.

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Good and bad points: — an attractive mixture of species in an irregular pattern, but also an unfortunate 'V' cut on the ridge from a straight ride crossing the skyline; Brecon forest, S. Wales.

are different, of course, but beauty does not exist in the name *hardwood*, beauty is a thing of the soul and of the eye, and once coniferous plantations have got beyond their 'pole' stage — have been brashed and thinned and high pruned so that you have to raise your eyes to heaven to look at them — then they start to take on their own beauty. Sitka Spruce is not only a delectable tree when half to full grown, it is a very valuable one, for not many other forms of husbandry can produce 9 or 10 tons of bulk cellulose per acre per year off land that will otherwise produce nothing except perhaps a few grouse!

There are also of course, the Norway Spruce, the Douglas Fir, the Scots Pine, and Larches. These, with Sitka Spruce are the common, profitable trees, but they have different features and different colours at various times of the year, so that they can be blended to give a very harmonious whole.

An aspect of their work which is dear to the hearts of the British Forestry Commission, is the National Forest Parks. While in no way minimising the excellent work of the National Parks Commission, they take a modest and justifiable pride in the fact that there were a number of Forest Parks working and available to the public long before legislation was enacted to enable the National Parks to come into being. This is the real answer to those who say that the Forestry Commission pays no attention to amenity, to recreation and to the aesthetic aspect of the countryside.

There are now eight National Forest Parks, which are administered by committees made up not of government officials, but of lay members of the public who are interested in forestry, and in this sort of amenity and recreation. There is a special section of the Forestry Fund devoted to the maintenance, development and increase of these Parks, which aim not only at doing a part of what the National Parks do, but also aim at getting visitors interested in forestry. This is quite deliberate.

Particular efforts are made to position and develop the plantations in a strict *landscape* relationship to agricultural land, to small communities, fishing lakes, waterways and places of exceptional value such as viewpoints and vistas. A considerable sacrifice in terms of economic values is made in the National Forest Parks in the interests of their other features, and the Commission 'bends over backwards' to try to fulfil the canons of good rural integration in every sense.

The facilities established for people who go to enjoy the landscape include areas for parking, caravaning, tenting, general camping grounds with toilet facilities, and a pavilion where clothes can be dried and a hot meal prepared on a calor gas cooker or even an electric cooker. There are barbecue sites, swimming, fishing and climbing opportunities and all the trappings that go with modern hiking, rambling, caravaning and the general exodus from the urban areas.

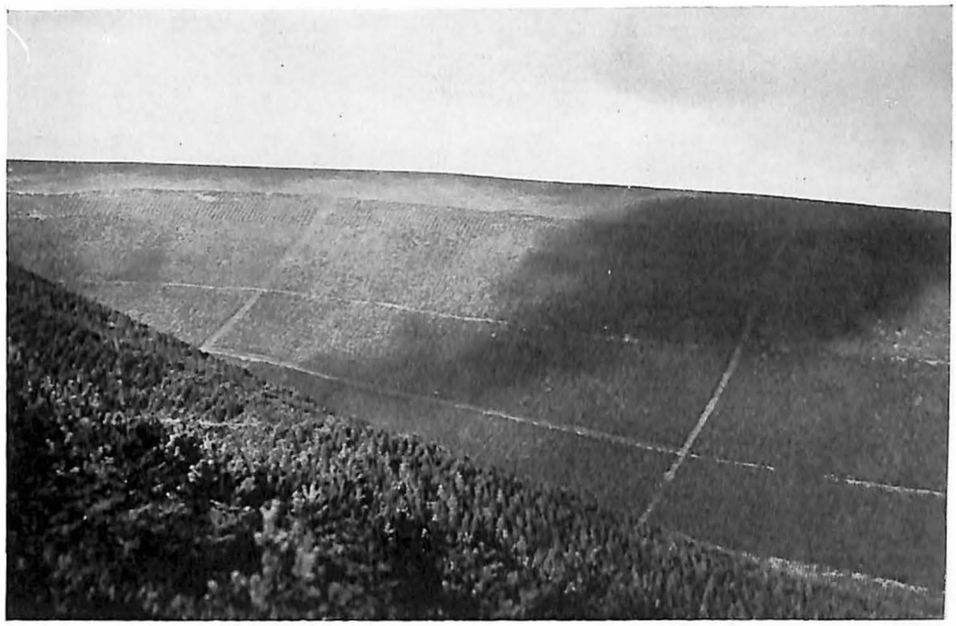
Routes have been sign-posted, nature-trails prepared, and Tourist Guides published which include sections on geology, ornithology, antiquities, archaeology, forestry, — in fact every phase of natural history. These Parks are not, of course, intended to impinge on the National Parks. They are designed to increase the interest in, and love of forestry, which can only be for the national good, but of course state forestry does also come into close contact with the National Parks.

There has been a considerable degree of controversy about the development of forestry in the National Parks, and there is now a voluntary arrangement whereby the National Park Committee, jointly with the Forestry Commission endeavour to produce a mutually agreeable plan for forestry development in the Park. Of course while one Government Department can talk to another Government agency to reach an agreement, private enterprise is obliged to consult no one. The Act of 1949 under which the National Parks Commission was established, puts very categorically and clearly the roles of agriculture and forestry in the Parks. It looks upon them as a kind of natural phenomena to which everyone is expected to pay regard. There is a great deal of private forestry in the designated areas, by organizations who owe allegiance to no one, and the *voluntary* agreements reached are the only way in which control can at present be exercised. Even these agreements are dependent upon the citizenship and innate good sense of the private timber growers to ensure that the plans are adhered to.

The Forestry Commission has not always paid adequate attention to the relation of forestry and landscape design. In early years dead straight rides, rides going directly up to the skyline, and sharp-edged rectangular plots were quite common. Today, forest officers in their probationary period are given training in good and bad methods of planting in the landscape, and there is an informal exchange of ideas with universities, planning staffs, and professional people including landscape architects.*

There are now many examples of forestry work carried out with the intention of good integration with the landscape, including hanging woods, planting in relation to escarpments, vistas and vantage points left open, roads carefully sited, and species adjusted to give variety, colour and breaking of line.

One of the main points of criticism in the past has been the complete 'blanket' planting of conifers over undulating country. This blanketing is perhaps acceptable in Alpine-type scenery, mountainous and sharp enough for the hard outline of ridges to be still visible, but it is not welcome in the lowlands. In gentle, softly rolling country, the sub-



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Scenery with high landscape value, resulting from sensitive forest pattern and good integration with agriculture; Llaneglwys, Brecon, S. Wales.

tleties of texture, light and shade, and shadow which make the hills interesting are lost under a continuous mantle of trees. Some of the main principles of landscape design in forestry work can be simply set down:

Forest roads must not have a gradient greater than 1 : 10, and, even when fitted to the contours will at first show a scar. The scar will of course be lost to view in time, and if roadmaking can be delayed until the young trees have reached a few feet in height, may not be visible at all. Roads and pedestrian paths in public use are depressing when flanked by walls of green conifers. This can be mitigated if areas flanking the road on the lower side are left unplanted, or if at least, openings are left for views out. Extraction routes for timber are essential in economic forestry, but the wide gash caused by dragging out whole trees is less essential today, when portable power-saws enable timber to be cut up where it falls.

Fire breaks and rides should be very carefully sited, and advantage taken of every natural feature which could serve to locate them in accordance with the configuration of the ground. Compartments do not have to be rectangular, as were the early trial plots, which were set out by laying down straight lines on a plan. The boundaries should be established on the actual site, using lines which follow the contours, or natural demarcation lines such as streams. Needless to say, fire breaks and rides should not go sharply up hillsides, nor cross the crest except at such an acute angle that no 'vee' cut in the skyline will be visible.

The perimeter edges, and boundaries between compartments can be softened by introducing trees of another species, or hardwood trees, but this should be done sensitively or the line will be even more obvious, being picked out by a band of different colour. The insertion of other species should be by drifts or 'tongues' pushing into the main block

22
Rides following the contours; European Larch on Drummond Hill, Pertshire, Scotland.

23
Hill development showing plantations on middle land (ffrid) with sheep tracks from the lower farmland up to mountain grazing on hill tops; Gwydyr forest, N.Wales.

24
Forestry on the upper slopes and valley bottom, leaving the flatter ground for agriculture; Langdale and Bickley, N.E. England.

along the contours, and broken by small clearings left with no planting at all. Mixing of species can also be done within the main blocks of planting, but again with feeling. A random mixture may succeed, but grouping of species with soft moulding fitting into the contour pattern is more successful. In order to avoid any line showing at the boundary between species, it is possible to use a random mixture for two or three overlapping rows at the junction.

Interplanting between established hardwoods, and underplanting of hardwoods below quick-growing conifers are well-established practices which will eventually result in a mixed woodland.

It is not only the relationship of forestry to visual amenity which is important. For forestry to fit comfortably into the countryside, the integration of forestry and agriculture is essential. There is often, of course, competition for suitable land, but by-and-large agriculture succeeds best on the richer soils of the valleys, forestry uses the poorer upland soils. It is however, often undesirable to plant over the tops of high hills, and co-operation of interests can combine forest rides with access tracks for sheep to graze on the summits.

Legal or economic boundaries may give hard lines between farmland and timber, but 'give and take' lines, based on soil suitability and natural features will allow interpenetration of field spaces and solid woodland. Even better integration can result if farmers can be encouraged to grow trees as a crop, and for shelter. Such small areas may not be wholly economic, but can replace the hedgerow trees which are being lost by large scale mechanization of agriculture.

New forests are usually situated in upland areas which have a low population density. Because of the low pressure of people they are areas suitable for nature conservation, and are areas attractive to

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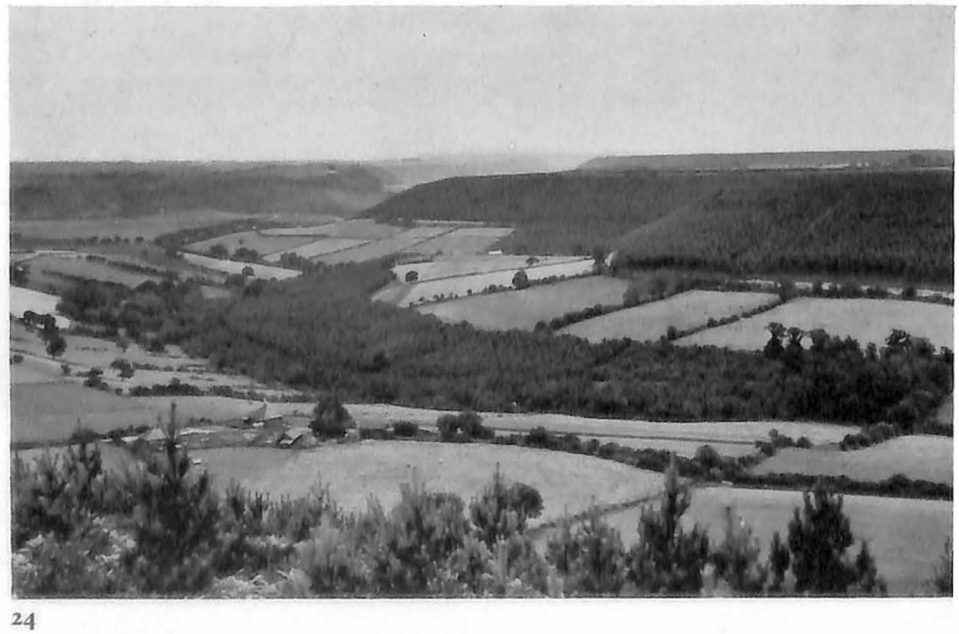
23



24

24a
Planting on gently rolling ground using existing deciduous trees and scrub to soften the edge; Princes Risborough.

24a

climbers, and ramblers. They are also areas liable to soil erosion or impoverishment, and are inevitably the water-gathering grounds for water supply for the more populated lowland areas.
These facts lead to the conclusion that some degree of *multiple-use* of state forests is essential, and already this is partly taking place. For instance in 95% of all the Forestry Commission areas in Britain the sporting rights are let either to the original vendor or to a suitable tenant. In the Border forest of N.E. England improvements in soil, shelter, and grass strains by the foresters, have substantially *increased* the number of sheep per acre, and increased the production of both meat and wool, with the advantage to the forester that the sheep keep the fire breaks cropped. An important joint use is the afforestation of water catchment areas. Experts do not agree on the figures for the reduction of available water by trees, but it is certain that no catchment area has an impounding capacity equal to 100% of precipitation, and so the amount taken by trees can rarely be critical. The advantages which must be set against any reduction in water yield are: purity of water and reduction of silting up; protection against erosion and flooding; delay in peak run-off so that supply is more continuous. These advantages, of course, become more apparent as forests mature.
The other aspect of multiple use is that of recreation already mentioned, and it is noteworthy that the largest block of spruce forest in Britain attracted the largest number of over-night, weekend, and weekly visitors of any National Forest Park — something in the order of 150,000 people in six months.

In conclusion it is wise to take a broad view of forestry and the landscape, in the past, and in the future:
In the period following the last ice age, a steppe form of vegetation was succeeded by forest; first mainly birch, then pine, and eventually a mixed hardwood forest.
Without man's intervention, Britain would be largely covered with hardwood forest today. Man has cleared almost the whole of the timber, and the forests which persist have been modified by his activities. By mixing of species, improvement of species, introduction of exotics, selective felling and coppicing, he has changed the character of the forests for economic ends.
In recent years the new forests have tended to be largely monoculture stands of softwood trees, covering large areas of country. The dangers of soil deterioration, and ecological disasters resulting from single age mono-specific forests are well recognised by foresters, but the creation of forest on low grade bare land in exposed situations has meant that only a few hardy species could be used initially. It may take more than 25 years to get changes in pH values and other forest conditions in order to grow more diverse mixtures of species, but the second rotation of forests in Britain are likely to have a much more satisfying appearance.
In the meantime, the vast monoculture stands of conifers are the greatest single factor in the countryside, and their impact is greater than that of any industry, extractive industry or transport network.
Future forest planting may be restricted by availability of land. Much land which would be suitable, is at present common land, and cannot be acquired. Restrictions on planting are in force in National Parks and Areas of Outstanding Natural Beauty.
Climatic conditions of exposure or industrial pollution may prevent conifers from succeeding. Agricultural prosperity, the extended use of marginal lands, the use of land for military training, shooting, water catchment, the high cost of land, all limit the amount of land available for forestry in the future. Private forestry however has more freedom in the acquisition of land, as it is less restricted by agricultural demands and is free from any planning control.
The conclusions which may therefore be drawn are that the probable future effect of forestry on the landscape of Britain will be: A continuing increase in the area of both private and state forests, still largely of conifers and mainly in upland Britain, but with a nobler appearance, as plantations mature, and an increasing diversity of species and age.
Better integration of forestry and agriculture; a balance of interests between forestry, nature conservancy and recreation, and social and economic changes due to the establishment of forestry communities with a diversity of occupations.

THE EDITOR — Largely compiled from information supplied by the Forest Agency of Japan

Japan's forests and forestry

Clifford R. V. Tandy (editor), Landscape Architect and Architect. Educated at Bishop Gore School, Swansea. Articled pupil to prominent local architect. Training interrupted by World War II, when for seven years Survey Officer in India and Burma. Later qualified as both Architect and Landscape Architect and served in Central and Local Government.
In 1959 appointed Landscape Architect to the Directorate of Works, War Office — after merger, Landscape Architect to the Ministry of Public Building and Works. Responsible for landscape treatment of Public and Service buildings in U.K. and overseas. Particular interests in organization, research and management problems of the landscape profession, and landscape work in tropical climates. Lecturer in landscape at A.A. Tropical School. Contributor to architectural periodicals; engaged on British Standards for landscape work; Honorary Secretary of British Institute of Landscape Architects.

Japan is one of the heavily forested countries of the world, having not less than 65% of its area covered. Three-quarters of this forest land is natural forest, mainly of broadleaf trees, while the 25% which is planted consists largely of conifers. Of the total forest land, natural and planted, about a third is National Forest, two-thirds being still privately owned.

Within its comparatively small area Japan has great variety of topography, climate, and soil, and consequently great variety of scenery and forest patterns. Taking the form of a narrow crescent of islands, the Japanese land, is in fact the summits of mountains which rise from the sea bottom in one of its deepest zones. It is therefore to be expected that there is little plateau land, that slopes are steep, rivers short and fast, and that erosion and flooding can be serious problems.

Due to the long, narrow geographical shape of Japan, it stretches across several degrees of latitude and consequently the temperature differences from North to South are great. The high mountains of Hokkaido are alpine while Kyushu is virtually sub-tropical. There is no dry season and rain is liable to fall in any month, but its amount is variable and influenced by seasonal, monsoon and typhoon conditions.

Soils are all of volcanic origin, being mainly acid to neutral, dry or wet brown forest soils, but with some black and red soils and podsols. As would be expected, the distribution of forest types is governed by soil and rainfall, and particularly by latitude-altitude locations. There are sub-tropical forests which are mainly evergreen over the South islands and southern part of Honshu comprised of Evergreen Oaks and Shiia species, with deciduous Oaks, Japanese Hornbeams and Pines.

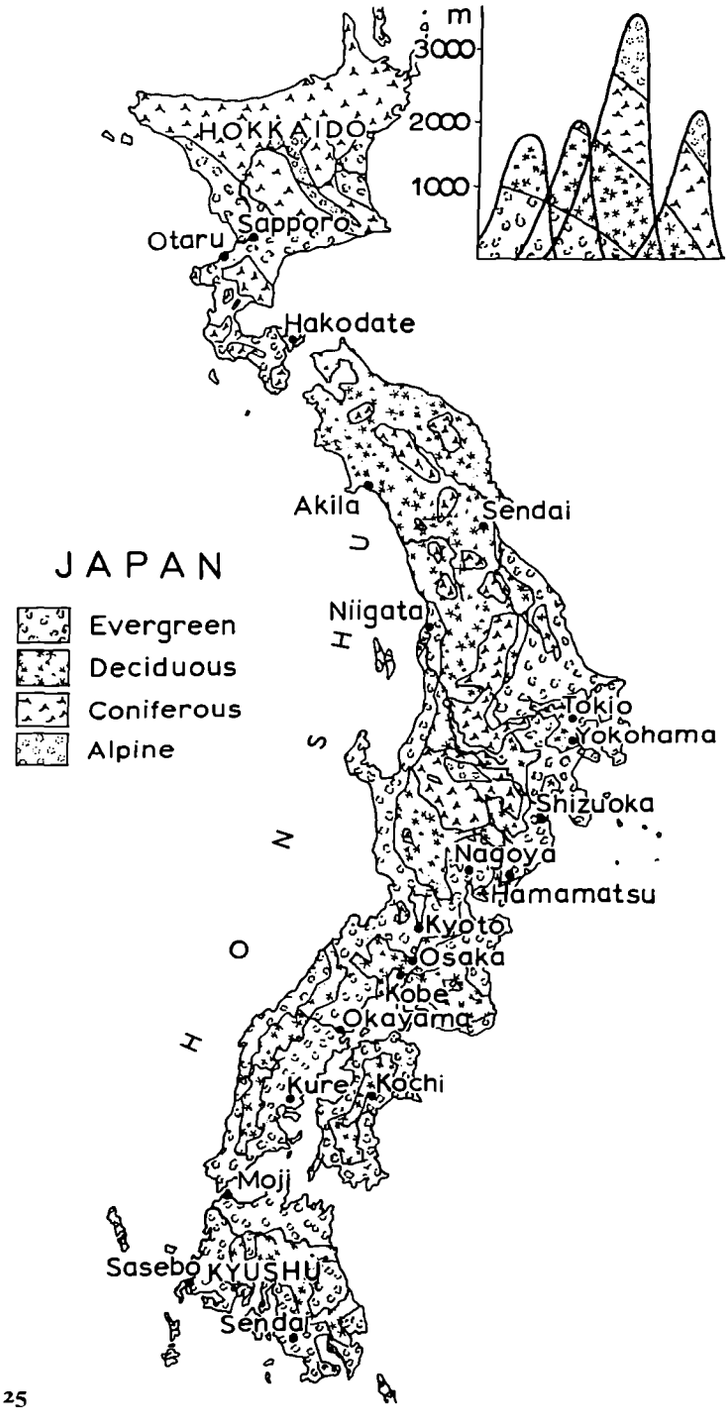
In the main temperate zone are the principal forests in which are large stands of Japanese Beech, (Fagus Crenata) and Native Birch, Limes, and mixed broadleaf trees. The Northern parts and mountainous areas support largely coniferous forests with local species of Abies, Picea, Taxus, Tsuga and Japanese Larch. Native Birch, Alders and Poplars sometimes take over as secondary forest. Planted species are mainly Cryptomeria Japonica, (which is almost ubiquitous through the country), Chamaecyparis, Japanese larch and the densiflora Pine.

It is interesting to discover that almost the whole of the private forests, which form the greater part of Japan's forests, are owned by farmers. The link between forestry and agriculture is very strong, and mainly economic. Land-holdings are small and an agricultural living is inadequate without some other source of income.

The division into National, Public and Private forests, the two or three million forest owners, the areas of 'common' forest, and smallness or fragmentation of holdings make forest management a difficult problem in Japan. However Government assistance, favourable taxation, subsidies and shared schemes of afforestation all contribute, as do the beneficial schemes of forest owners' associations.

Reafforestation has been carried on for more than 400 years, though its most vigorous period has been that since the Meiji Era (1868—1912). There have been periods of denudation, and even devastation when timber consumption exceeded planting (timber has always been Japan's principal constructional material) — the last such standstill being 1946—1950, since which time the Government has made forestry an important factor in economic progress.

The principal trees now planted are Cryptomeria Japonica (sugi) and Chamaecyparis obtusa (hinoki) which between them make up 66% of newly planted woods. Of the remaining species most are also conifers. Only broadleaf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HOKKAIDO
Otaru
Sapporo
Hakodate
Akila
Sendai
JAPAN
Evergreen
Deciduous
Coniferous
Alpine
Niigata
Tokio
Yokohama
Shizuoka
Nagoya
Hamamatsu
Kyoto
Osaka
Kobe
Okayama
Kure
Kochi
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Sasebo
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25


HOKKAIDO
Otaru
Sapporo
Hakodate
Akila
Sendai
JAPAN
Forests
National Forests
Niigata
Tokio
Yokohama
Shizuoka
Nagoya
Hamamatsu
Kyoto
Osaka
Kobe
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27
Erosion control: grading work on steep hillside; stage after 2-months work.
28
Integration of forestry and agriculture which results in a far higher standard of scenic beauty.
29
Attractive pattern resulting from irregular boundaries and mixed-age planting of Cryptomeria Japonica var. Urasebaru.
30
Forestry on hillsides behind the Botanical Garden Nikko, on the fringe of the Nikko National Park.

woodlands are left to natural regeneration. There is little evidence of conscious design in forest planting in Japan, and landscape architects are not engaged on this work. (However this is not surprising, as the British Forestry Commission only engaged the services of a Landscape Consultant in 1964!) There is, in compensation a great natural beauty to be found, and the innate feeling for nature and the unself-conscious natural good taste of the Japanese country-dweller ensure that the work which is done does not offend against the landscape.

Moreover, there are certain factors which contribute towards the acceptance of commercial forestry into the landscape: The mountains of Japan, though rarely precipitous, are large enough, both in extent and in scale, to absorb large stands of a single species of tree and also the mass planting of conifers. Secondly the most frequently planted conifers, such as Cryptomeria, Chamaecyparis, Pinus densiflora have a softer and less angular outline than many softwoods planted in Europe. Another point of *scale* is that whereas the forested hill land is grand in scale, the flatter agricultural land is small and human in scale, and both topography and economics combine to make a sharp separation between the two. The result of this is that there is little of the visual disruption such as may be found in other countries where pure coniferous planting is imposed on gently rolling farmland. Even after allowing for these unplanned factors, there are areas of forestry which are beautiful in themselves, and it is interesting to analyse the reasons for such aesthetic satisfaction, if deliberate design is not in evidence. A main reason would appear to be that either through division of ownership, or through configuration of ground, plots are generally limited in extent and irregular in shape. Furthermore, either for the same reasons or because of climate and soil variations, there is an interesting mixture of species, age and height.

The accidental factor of typhoon damage, when thousands of trees may be snapped off, or ripped out by the roots may also be contributory to the irregularity and to the mixing of age and height.

Highly productive, modern commercial forestry is a recent introduction in Japan. Much of the forest — even afforestation areas — are based on old boundary and access patterns, and consequently straight rides and straight up-hill fire breaks are not seen. Planting goes gently with the contours and often even enhances the modelling of ground as seen from a distance. There is of course *some* blanket planting — some blurring of outlines and crossing of skylines by tree belts, but generally the feeling is given that the trees have been put in by a sensitive hand and that those who laid down the compartments had a love of nature and an 'eye for country' that is so natural a trait in Japan.

The forests serve other purposes than the production of timber. It is estimated that 12% of the total forest area has the main purpose of protection from erosion, landslip or wind blow. This 'protection forest' as it is designated is controlled by specific Government regulations, which prohibit grazing, restrict cutting or change of use of land, and make the planting of certain species obligatory. For this service there are benefits in tax exemption or reduction and compensation for losses.

Planting of trees is the final stage of many projects to control, limit, or prevent disasters. These include watershed conservation; prevention of wash-out and soil erosion, landslips; flood prevention, avalanche prevention, tidal flooding prevention. Certain of these involve large-scale work such as the re-grading and terracing of whole hillsides, and planting of a specific character such as for the stabilization of sand dunes.

Another important function of the forest is to provide for certain aspects of public recreation. This is a fairly new consideration in many countries, but Japan has had National Parks since 1931, and most of these include large forest areas.

The need to strike a balance between the various demands is emphasized when wild-life protection is included. The forests of Japan are the last sanctuary of local bears, antelopes, monkeys and a vast number of bird species including such protected varieties as red-crested crane, Japanese stork, crested ibis. In addition to the protected and wild birds there are great numbers of game birds. Deer are also game in many specific areas and sportsmen can take out hunting licences. In recent years hunting has been more strictly controlled to ensure a balance with wild-life conservation.

In terms of recreation and amenity there is considerable overlap in the activities of the Forestry Agency and the National Parks Association. There is therefore further mention of these activities in the chapter on National Parks.

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DR. SEIHEI KATO

The recreational use of forests

Prof. Dr. Seihei Kato, landscape architect. —graduated in the Department of Forestry, Tokyo Imperial University; received B.A. degree in the Faculty of Agriculture; — became landscape architect to the National Park Service of the Ministry of Interior, of Japan, and later became Associate Professor, and later, Professor at Tokyo University, Guest professor and lecturer at Berlin Technical University; — work includes consultancy for the master plan of Sterling Forest Garden, New York.

The National Forests of Japan have been for very many years well managed on the basic principle of 'Sustained Yields' and have kept up a fairly high rate of timber production, while maintaining the distinguished natural beauty of the mountain regions.

The general policy of the governmental administration is founded on the basic idea of 'multiple use' of the forests. Water supply, flood and erosion control, and nature conservation have combined with timber production for many decades, as the main purposes of forestry in Japan.

All forests are administered by the Forest Agency of the Ministry of Agriculture and Forestry. The National Park System of the country is administered by the National Park Service of the Ministry of Welfare. However in many cases the boundaries of the parks overlap into the National Forests, in which case the tasks of protection and conservation of these areas are carried out by the Foresters and Forest-rangers of the Regional and District Bureaus of the National Forests.

Because of the shortage of flat land in Japan almost every acre that is usable, is in agricultural production and this means, of necessity, turning to the hills and mountains as the venue for any large scale recreation. The forests therefore, whether part of the National Parks or not, must include, in their normal programme of use, facilities for mountain climbing, swimming, skiing, skating, walking, and even ball and team sports.

Public demands for the recreational use of forests have been increasing tremendously in recent years. Statistics show that the annual rate of visitors in 1962 was 230 million persons, among which 54% is estimated to be the proportion engaged on recreational pursuits. The annual rate of increase is estimated to be over 10%. These facts are indicative of the trend for an ever-increasing public demand for outdoor recreation, though improved transport facilities are a contributing

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31
New afforestation on mountain spurs in the Fuji-Hakone-Izu National Park.

Landscape and recreation

factor.
With this rapidly increasing number of visitors to the forests for the purposes of outdoor recreation, the forests are necessarily affected by the very high pressure of external forces. The results are — destruction of natural beauty, deterioration of wild plants and wild life, traffic hazards, crowded accommodation, and violation of the quiet wilderness.
The need to provide access, transportation and accommodation for large numbers of participants has tended to rank rather high in priorities, and visual beauty of scenery has sometimes suffered. It also raises the perennial problem of multitudes versus solitudes. The intensive use of forest areas can not only hinder their economic success, but can destroy the seclusion which people come to such places to seek.
Though the area of forested land in Japan is comparatively large, the net area per head of population is very small compared with larger or less populated countries such as U.S.A., Canada, Sweden, etc. It is only 0.27 hectares (2/3rds of an acre) per head. This fact means that a carefully planned programme of intensive use of the forests for recreation must be undertaken if pressures are not going to reach a destructive level. 'Recreational use' must become a fundamental part of the policy of forest administration.
Some steps have already been taken in this direction. A special Committee for planning recreational facilities and providing a conservation programme in the National Forests was set up by the Forestry Agency in 1963. Several Consultant Landscape Architects are working in this field in co-operation with the Government Foresters. Another Committee was also organized in 1963, within the scope of the National Resources Committee, sponsored by the Science and Technical Agency attached to the Cabinet. Several top-level landscape architects are active on this committee. The brief for the latter Committee is to give an authorized recommendation on the general policy of Forest Recreation to the Prime Minister. An overall programme for forest conservation, combined with carefully studied development plans for recreation in the National Forests, is therefore likely to be followed in the future. According to this programme, its projects include many forms of recreational facilities — driveways, nature trails, picnic grounds, camping sites, ski slopes, lodges, mountain huts, bathing beaches, public services, etc. which will be established in pleasing harmony with the outstanding landscape beauty of the forests. Greater numbers of visitors will be received with better services and under adequate control from an expanded administration system.
To realize this programme, Landscape Architects have a great share of responsibility. It will be their opportunity to express the skills of the landscape designer in solving the many difficult problems which arise.

HOLGER BLOM

Planning for recreation

Holger Blom, architect and landscape architect — was born in 1906, and graduated at the Technical University of Stockholm in 1928; also graduated from the architectural school of the Royal Academy of Fine Arts 1932, and qualified as architect SAR, and landscape architect FST. Has been Director of the Stockholm Municipal Parks Division since 1938, and has been a pioneer of modern urban landscape treatment in Sweden in the post-war years. Has specialised in the revitalization of the design of children's playgrounds.

The expression 'planning for recreation' needs analysing word by word. The word 'planning' is not difficult to understand, it means: 'make preparation for', 'organize' or simply 'design'. In its simplest sense the word 'design' can merely mean 'to make *drawings*'. The drawing is the means by which architects as well as landscape architects and city planners express their ideas and opinions.

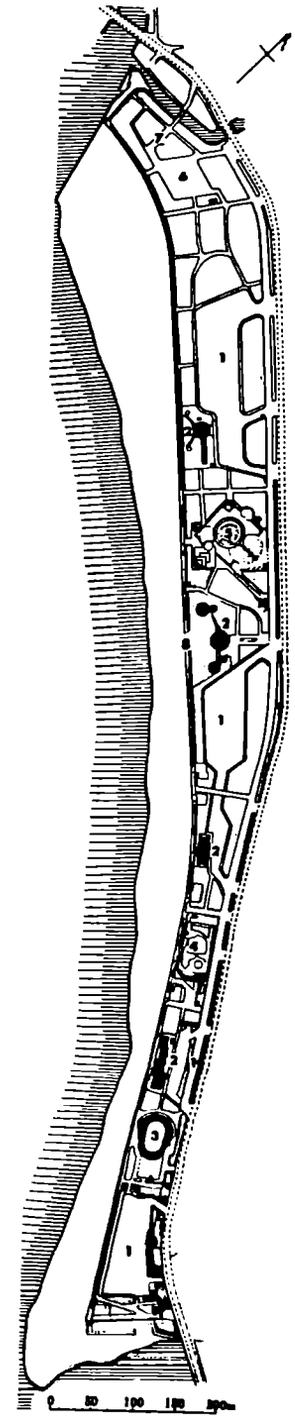
The word 'recreation' again has a very wide signification: it derives from the latin 're' which means 'again' and 'creare' which means 'create', 'produce'; in other words to re-create or regain something. We use the word 'recreation' today, to mean mainly 'to refresh' and it is in this way that landscape architects and landscape builders will regard it. This is the basis of our 'planning'. We strive to freshen up the individual both spiritually and physically by giving him opportunities to stay in *free nature*, to have *air* to breathe, *sun* to create vitamins, and the *vegetation* of the soil to give delight.

It is of course, not only a matter of giving the adult individual the possibility of refreshment after having been in our practical, efficient but unfortunately unhygienic communities; it is also a matter of giving to children, from the beginning, the nourishment they need to grow up to clever, free, useful and happy members of the community.

'Planning for recreation' means therefore, to obtain sufficient space and to build up these spaces, and their surfaces in such a way that they give each individual the greatest possible recreative exchange.

The *first point* 'required space', is not always properly considered. One tends to forget the great responsibility of the townplanner to give the landscape architect space to work with.

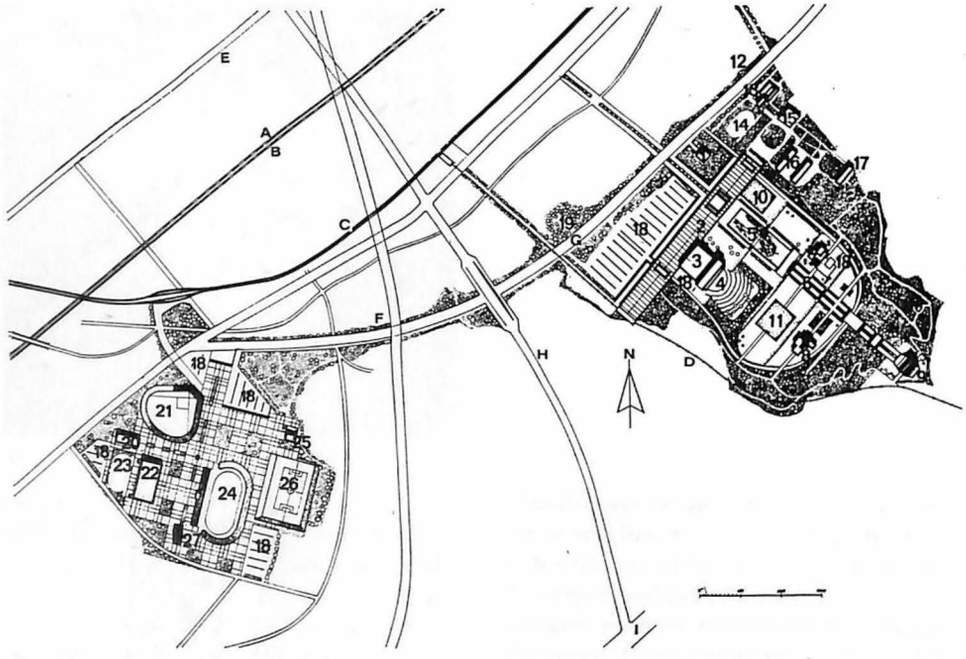
The *second point* 'the construction of spaces for recreation' concerns the responsibility of the landscape architects to create what is practical, efficient, and beautiful. For instance, this does not mean



32

SHONAN BEACH PREFECTURAL PARK (designated: November, 1957) This park is the largest in scale in Japan, with an area of 17.4 ha. There are about 30,000 black pine-trees (Pinus Thunbergii Parlatore), an open square which also serves as an open-air stage, facilities for sea-bathing, establishments for resting. The park has a coastline of 1.6 Km

1 Parking area
2 Facilities for sea-bathing
3 Pool for whales (the Marine land)
4 Marine animal zoo
5 Amphi-theatre (the Square of the Sun)
6 Open-air stage
7 Garden of specimen sea-weeds
8 Step revetment

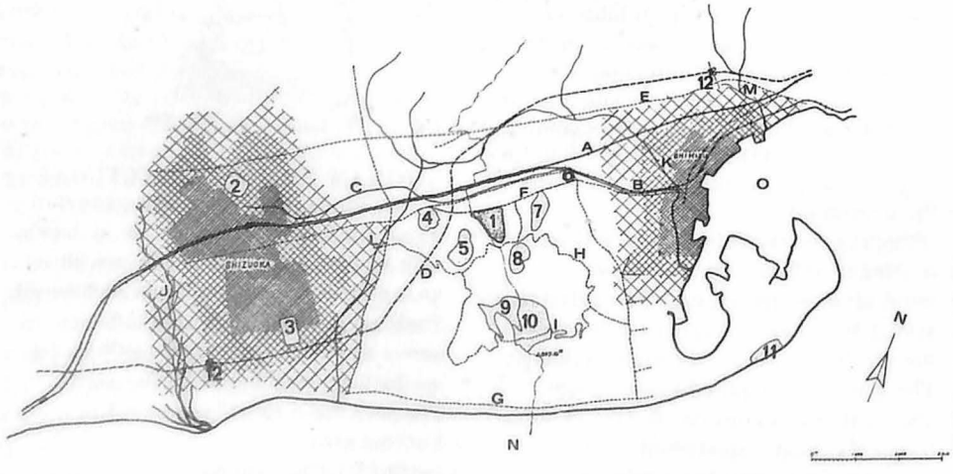


33
PILOT PLAN
SHIZUOKA CULTURAL CENTRE

This is an example of a cultural and sports centre planned to serve a newly developing region. It lies midway between Shizuoka city and Shimizu city, and includes not only sports facilities, but also museums, library, concert halls, and theatres.

1 Administration office
2 Platform
3 Theatre
4 Open-air theatre
5 Pond with jets
6 Central promenade
7 Library
8 Art museum
9 Monument with gallery
10 Lot for music hall
11 Lot for museum
12 Old tomb
13 Kindergarten
14 Track
15 Auditorium & library
16 Bldg. of college
17 Dormitory
18 Parking space
19 Kumano shrine
20 Indoor pool
21 Baseball field
22 Gymnasium
23 Sub-track
24 Stadium
25 Administration office
26 Ball game field
27 Control tower

A New Tokaido line
B Tokaido line
C Shizuoka local line
D Mono-rail way
E Route no. 1
F Tomei highway
G By-pass road for cultural center
H Nihom-Daira toll road
I Inner loop road



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SHIZUOKA CULTURAL CENTRE

The map shows the location of this cultural centre in relation to the development of the region — a subject discussed by Professor Yokoyama on page 74.

1 Shizuoka cultural centre
2 Sunpu park
3 Toro ruins
4 Kusanagi sports centre
5 Administration centre
6 Play-ground
7 Zoo
8 Cemetery
9 Golf course
10 Nihom-Daira prefectural park
11 Hagoromo park
12 Interchange

A New Tokaido line
B Tokaido line
C Shizuoka local line
D Tomei highway
E Route no 1
F By-pass road for cultural centre
G Outer loop road
H Inner loop road
I Toll road
J Abe river
K Tomoe river
L Drain of Tomoe river
M Okitzu river
N Suruga bay
O Shimizu port

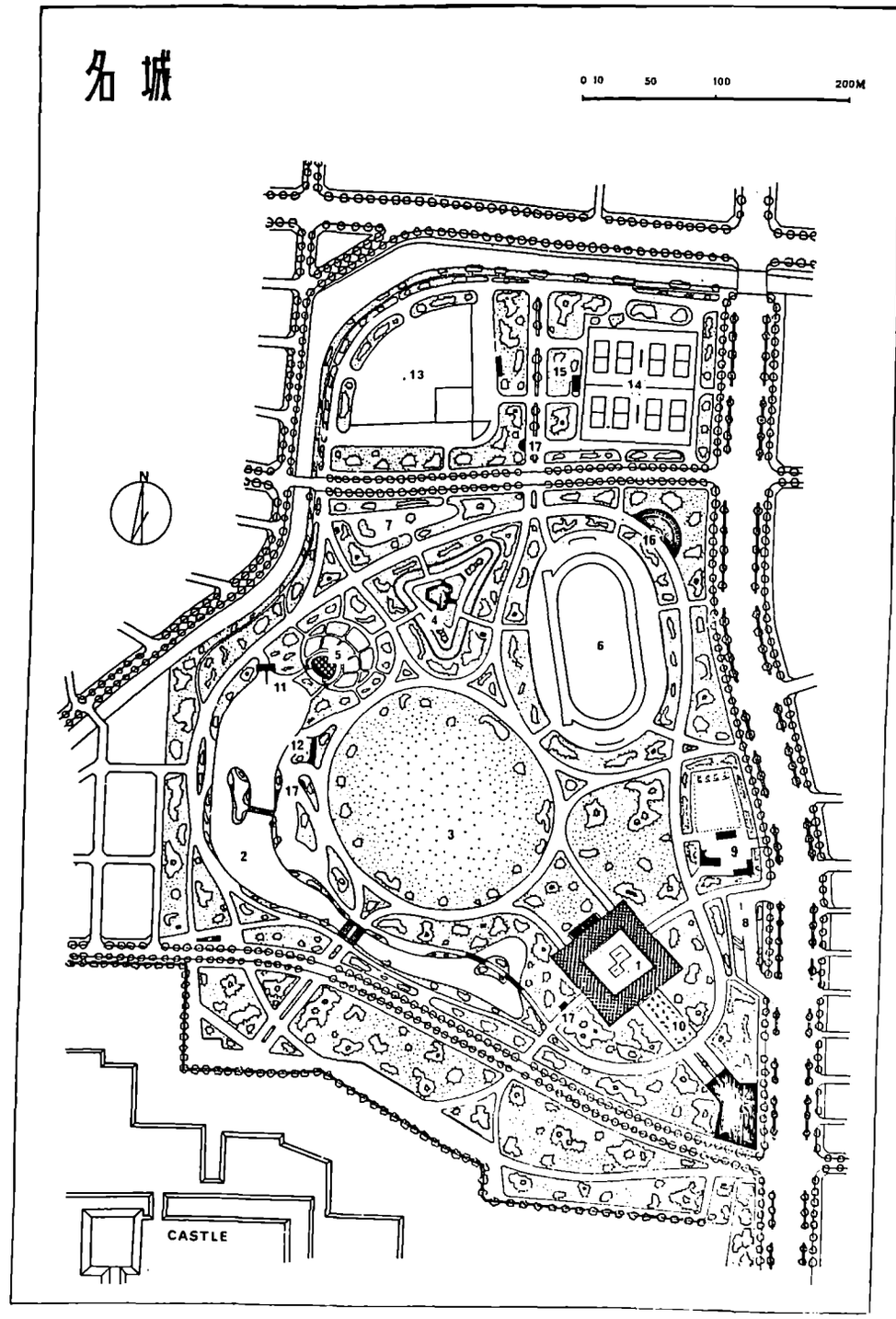
only to lay out botanical gardens, because it is not only the latent interest of the human being in botany or in vegetation as such, which is supposed to be refreshed; — all his senses are to be refreshed, the physical and spiritual. This refreshment has to be an exercise for the muscles, stimulation for the brain, a pleasure to the eye, the sensitiveness of the fingers, smells to please the nose, and it must provide peace and rest as well as encouraging sensitivity to the wonders of nature. This must be stressed because there has often been failure in this respect. It is not important to teach the names of the flowers and their systematic classification, but rather to provide the pleasure of their colours and smells and the buzzing of insects. It is not a matter of the designer's own purpose in creating fashionable lay-outs, but it concerns happiness and pleasure in the art, the architecture, the beauty, and in everything created with the aid of nature, from free-form lay-outs to formal architectural creations.

The children must be given the opportunity to let their fantasy work while playing outdoors; they must get nourishment for body and soul. In sun and fresh air the adults must be able to keep and renew both physical and spiritual health.

'Recreation spaces' is a clumsy name, they may be called simply '*parks*' and in this name may be included all free areas for recreation, from the smallest square to the large sportsgrounds and nature-reservations.

There are many different kinds of park — the type depending largely on accessibility: the nearer parks are to housing areas, the smaller they are likely to be, but the more concentrated is the use of them. Conversely, the further a park is situated from centres of population, the fewer are the number of people visiting it, per unit of superficial area.

a '*Nearby*' *parks* are those recreation spaces which are easily accessible and likely to be used *for a couple of hours or less*. To this



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PLAN OF NEW PARK AND ATHLETIC GROUND AT MEIJO CASTLE

1 Fountain
2 Boating lake
3 Lawn
4 Flower garden
5 Open air theatre
6 Playing pitches
7 Toddlers playground
8 Car parking
9 Administration office
10 Roadway
11 Boat house
12 Rest house
13 Baseball pitch
14 Tennis courts
15 Locker rooms
16 Pergola
17 Shop

category also belong lawns which form the immediate surroundings to apartment houses, offices or factories. Here also belong the park serving the city block, and the central one of the neighbourhood-unit.

b '*Excursion*' *parks* are the parks for which one needs the *greater part of a day or more* to visit them. To this class belong the larger city parks, the parks immediately outside the community, and distant parks situated in the countryside or the coast. The latter may often serve the additional purpose of being a nature reserve, or may be a national park.

Because a park situated near to an inhabited area is likely to be smaller and more intensively used it is all the more important to ensure thorough and comprehensive planning of its layout, so that each part of the park will be used to its utmost and best capability. For comparison, the sophisticated, more intensively used city park may be likened to a residential flat, situated in the fresh air, which has got separate rooms to be used for different purposes and for different age groups. The small children have their spaces, the elder children have theirs and the adults demand also special spaces.

It must be emphasized again: plants, flowers, grass, trees and shrubs are not an aim, but the *means* with which to build up an efficient, beautiful park. We do not build a house to have something to decorate; we do not create a park to have somewhere to plant a tree. No, the decoration of the house only completes the house and makes it gay and enjoyable. Logically therefore the plant material of the park is the means to create attractive, airy spaces. To create parks for men is an art. It is an architecture in just the same way as is the work of the building architect. It is an *art* which is creating part of a great social service.

Who is it that plans?

Who has the duty to see that individuals get the recreation spaces they need?

It is mainly the local authorities of the community who carry the responsibility. It should be part of the preparation of a master plan for the city to report on the required spaces for parks. No city plan should be passed which does not include measures to meet the demands for recreation grounds. It requires rules which clearly state the *size* of the park spaces which are needed in the community, and how these shall be *located* to be easily accessible for the individual. The size can be expressed in relation to the number of inhabitants. It can also be expressed as a proportion of the built-up area.

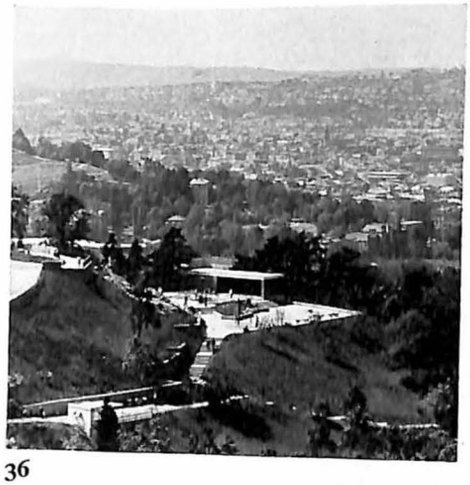
The local authorities of a city, in the same way as they are responsible for satisfying the demands for space for dwellings and apartment houses, offices and other working places, must also answer for the control, by suitable planning means, of the parks — which must be available for many different purposes. Obviously all parks cannot be made from the same pattern. The possible variations are very rich, and, as landscape architects we can and should make designs or schematic designs, which are the result of the best planning ideas in the field and which are the result of practical experience.

It is clearly apparent that rules and logic, and practical design premises, do not exclude the art in our work. No more than in building design, laws, measurements and regulations preclude the creation of artistic architecture.

However, for the creation of good recreation places quite a number of things are needed which we do not yet have, or at least do not have enough of. One of the most important is *understanding by the authorities* that it is necessary to make financial sacrifices, as well as to provide competent people capable of planning for recreation. Next it is essential to have a proper *analysis of the problems*. Finally it is necessary to have good landscape architects (with the accent on both 'landscape' and 'architect'.) And above all the landscape architects must have an understanding of the needs of individual human beings; — it is for them that the recreation areas are to be created.

GUSTAV ROHLFS

The design of recreation grounds for different requirements



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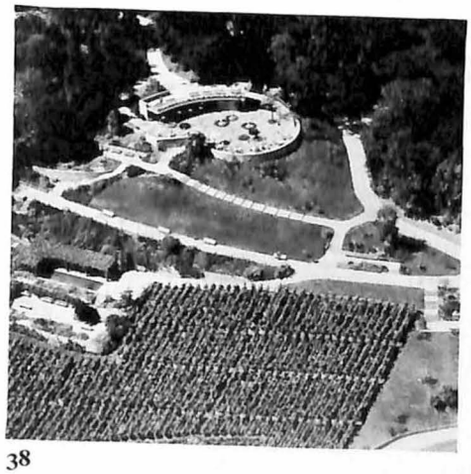

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Now follow some examples in Stuttgart. There are about 635.000 inhabitants; the whole town area amounts to 20.000 ha, of it 5.000 ha wood, which is situated on the heights around the built-up areas — in the midst — 200 m lower situated lies the city. Villa Weissenburg with 3,5 ha — the planning of parks and open spaces tries to penetrate the built-up areas from the outside.
37
Not far away is a cafe at a lake.
38
A vineyard — at the left the pergola and in the background the view point with a milkbar.

Gustav Rohlfs, Garden and Landscape Architect BDGA and ADL. Born in Lüneburg in 1918. Qualified as Garden Architect. For many years reporter of the Central Union of Garden Architecture and of the Working Community for Garden- and Landscape Culture at Bonn. At present leader of the Department of Planning and New Building of Green Belts at the Horticultural Office at Stuttgart.

Recreation is made necessary by the stress to which modern man is subjected in our industrial society. He must face this stress on the job, at home, and on the streets. Such a negative influence on health and life-expectancy we must simply accept as a common phenomenon, without being able to deal, in our profession, with individual types of damage in clinical detail.

Today, recreation is no longer conceivable as simple relaxation or distraction — possibly against a rural background — nor is it mere adherence to the catch-phase admonition 'take a break'! On the contrary, recreation must be examined much more comprehensively. In an industrial society, recreation ranks equally with working, having a place to live, communicating, educating oneself, and being part of the community. (Dr. Isbary).

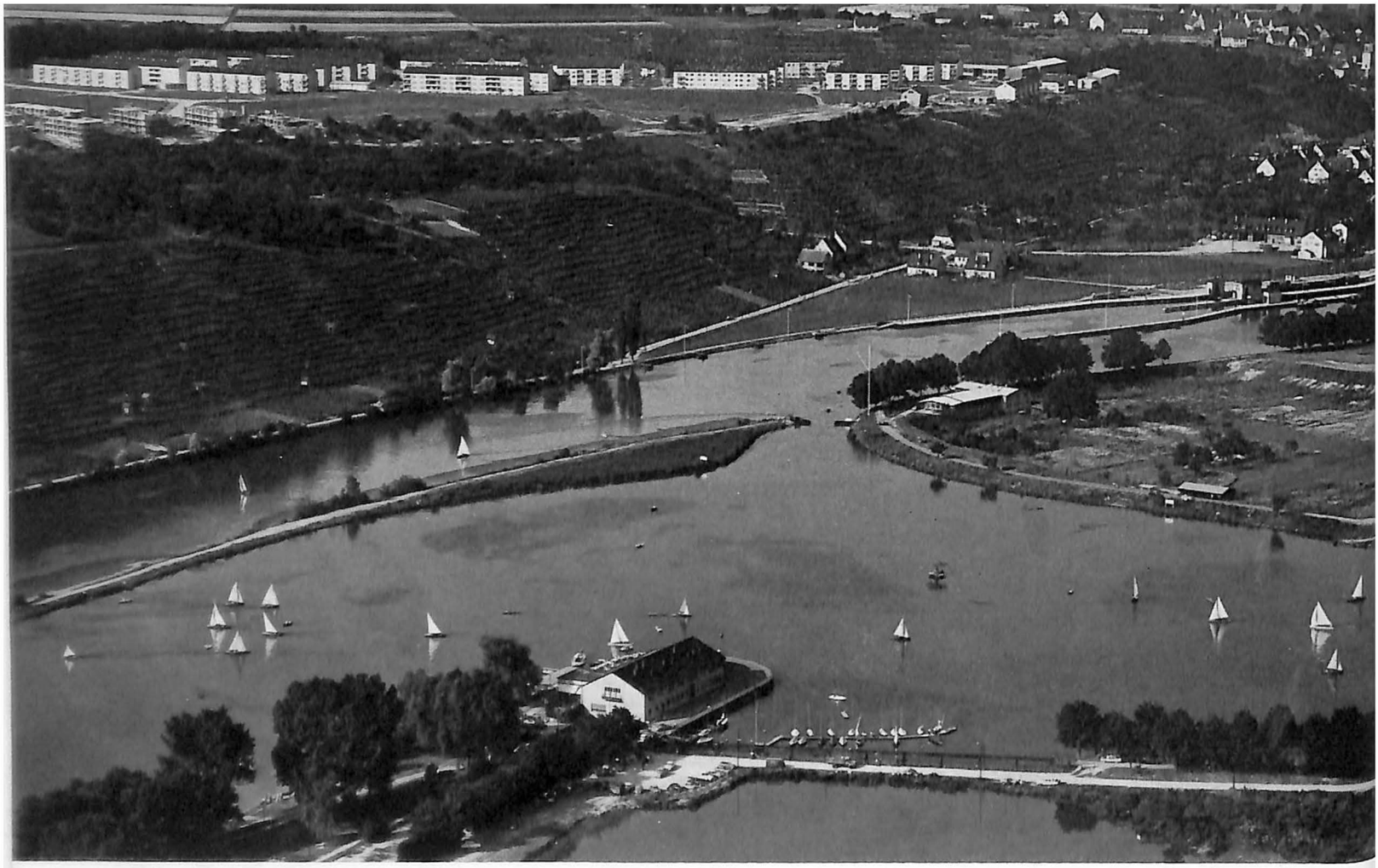
Today, the entire human being, body, soul, and mind, needs recreation.

The elements of recreation may be categorized:

1 The release of nervous tension.
2 Wholesome recreation (— that is: 'play').
3 Change of surroundings — for example, town dwellers going out into the countryside as a means of gaining inner calm and new strength.
4 Social life.
5 The stimulation of new ideas, finding one's real self, broadening one's outlook, clarifying one's ideas on the true purpose of life.
6 Engaging in a part-time occupation, of a really leisurely nature, but with a definite goal in view.
7 Productive activity.

As Schiller said, 'Man is only truly man, when he is playing'. The Dutch philosopher Johan Huizinga wrote his 'Homo Ludens' with this concept in mind, and in the work arrived at the conclusion that *play* was the original source of culture.

A study of recreation demands must consider the 'when', 'where', and 'how' of



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39
The 'Max Eyth See' — in the background the 'Mönchfeld' — here is planned a recreation centre for some development areas in the neighbourhood with sporting grounds, playing grounds for children, swimming pool in open air and the lake with many categories of aquatic sports.

40
The playing ground for children with slides and various constructions for them to climb on.

41
The break in the evening – just a 'Feierabend' as we say in Germany.

42
People can have an outdoor chess.

recreational provision. To begin with, it is possible to qualify recreation according to the length of time available for it. There are four main time-classes of opportunity for recreation, and the location for each is different:

1 Daytime breaks:
a work break for adults
b school play-time for children
This usually means taking advantage of opportunities in, or adjacent to, the place of work, and in school playgrounds.

2 Evening cessation of work
Recreation in or near the home, — mainly within the community.

3 Week-end work break.
From having originally been one day or less, the end-of-week work break has grown to 2 days, and may become 3 or 4 days. It is usually spent on the outskirts of the town, or in the countryside (or coast) near, or further from the town according to the mode of travelling i.e. walking, cycling, or travel by tramway, railway and motor car.

4 Annual holiday
May be taken on the outskirts of the town, or in recreational areas, or Nature Parks either in one's own, or other countries. In considering 'how', the way recreational times are spent is very much a question of individual preference. Apart from playing games, sport, hiking, other forms of recreation which are of particular value are the experience of nature, and various cultural activities. The choice available is, of course conditioned by the time-location relationship expressed above, and consequently there emerge certain pointers to the variety of choice in outdoor recreation:

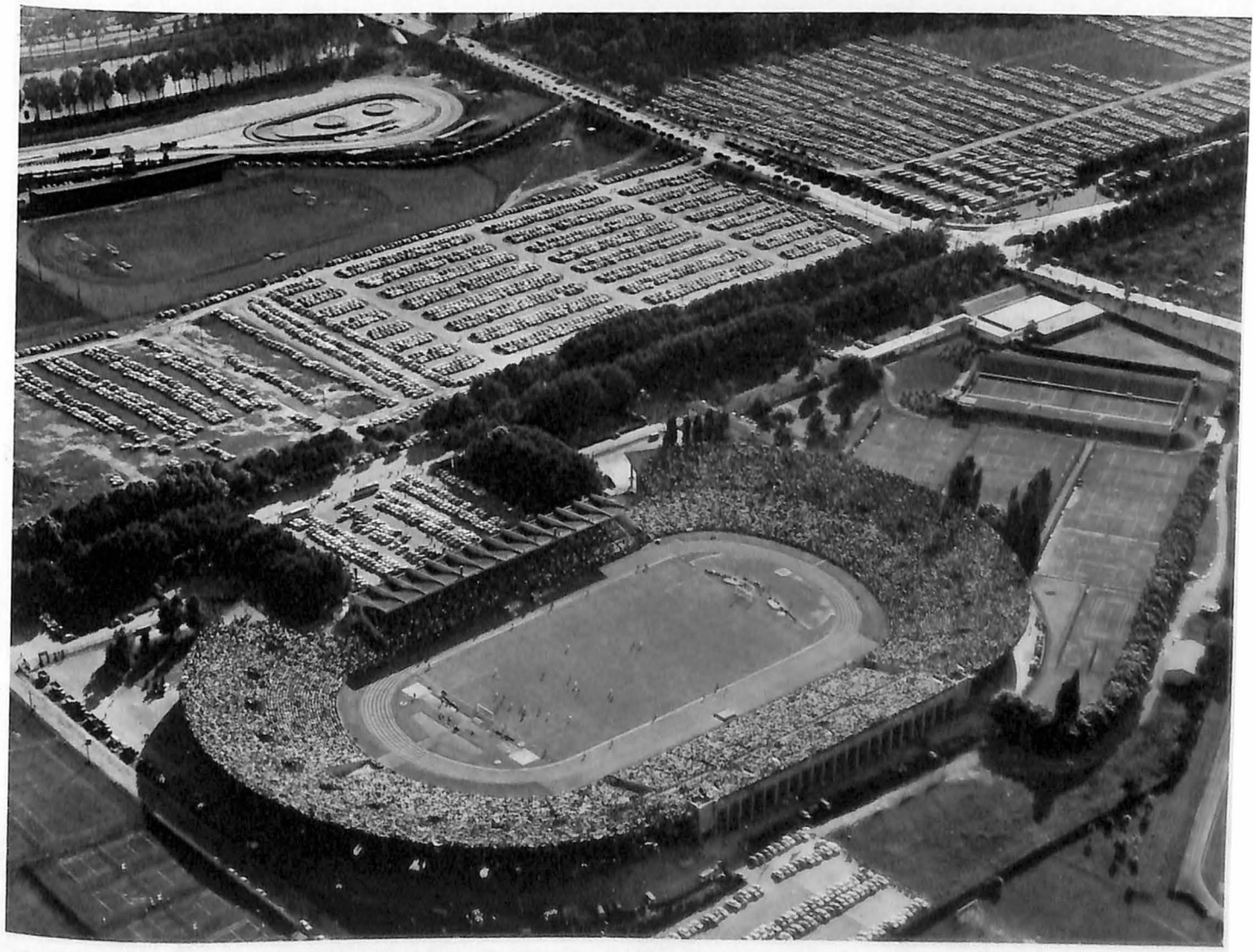
1 During short breaks at work — in contrast to the work, relaxation or physical activity (un-organized games), fresh air, and a pause for rest amid the living green of nature.

2 After work in the evenings working or resting in the garden or allotment, playing games, sport, or going for a walk.

41-42

44
A watergarden.

45
The Neckarstadion for 75.000 persons — many people and many cars.



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NOREDA A. ROTUNNO

The design of recreation grounds requirements

3 At the weekends — in woods and fields, in a recreation-ground or public park; — in a week-end cottage or chalet (caravan) — or 'residential-allotment'; — at peaceful retreats in the country or coast, as relaxed as possible, making the most of the means of transport available.

4 At the annual holiday or vacation times, the more distant areas gain in importance, owing to increased mobility. Holiday areas in mountainous districts or at the seaside; holiday camps and holiday villages, family hotels, youth hostels, public national parks and large open spaces.

Annual holidays are of course becoming longer, as is all leisure time, and recent trends indicate the tendency to take two annual holiday breaks. This is coupled with overseas travel at one or other of the holiday breaks, to countries where the climate is different (i.e. warmer, for relaxation, or swimming, or alternatively more suitable for winter sports).

The attraction to the natural countryside, — and particularly to its finer scenic attractions — is reflected in the designation of Nature parks. Since 1954, 23 new National Parks, with a total of 3.1 million acres (1.255 million hectares), have been created in the Federal Republic of Germany. In the planning of recreation grounds, green belts, parks, and open-spaces, landscape architects have taken a leading part. The principal goals for planning recreational areas, may be briefly set down:

a The construction of every recreational area should be preceded by a well-conceived plan, but this need not be meticulously detailed down to a mechanical perfection.

b Simplicity is better than complexity.

c The natural is to be preferred to the mechanical.

d "Anything that promotes activity is more valuable than passively looking on." (Prof. Kühn).

Professor Diem, the well-known advocate of games and sport, gave the following recipe for leisure and recreation:

physical activity
well-designed living space
beauty
the appeal of nature
bathing
pleasant company

As recreation-centre planners, he called upon the Landscape Architects of all nations, who, by virtue of their profession are likely to know most about planning for recreation and for the welfare of humanity.

Noreda A. Rotunno, born Italy naturalised citizen of U.S.A.; landscape architect and member of A.S.L.A., Syracuse U.S.A.; graduated at Syracuse University, then Massachusetts Agricultural College and obtained M.L.A. at Harvard Graduate School of Design; in private practice engaged on landscape work of schools, campuses, parks, estates, and exhibitions; Professor of Landscape Architecture; author and lecturer; active in work of A.S.L.A. state Chapter and in many civic organizations.

for different

Dr. Richard Stultz, chairman of the Recreation Department, University of Syracuse, U.S.A., has stated that 'recreation is deeply involved in American traditions. Recreation is not so much what you do, as the enjoyment of having done — a result of what we do.'

Recreation is something which satisfies the individual needs — It is as important to the well being of man as food or shelter.

Recreation is not just a matter of spending time doing something — The thing done should be something which benefits the individual and is not detrimental to other individuals or society.

Recreation is ever changing. With the change in our culture, society and economy, there will be corresponding changes in recreation.

Today, — at least in prosperous countries — recreation is a way of life. The enjoyment of recreation brings together people from all strata of life and acts as a catalyst in making a melting pot of human relations.

Recreation begins at home. Home should be one of the most influential recreational stimulants. The more effort, we, as parents, give to programmes and facilities to encourage the young in proper pursuit of recreation the sooner it will lead to a better society.

We, in the landscape profession, should also meet the challenge and play a greater part in the development of the future of recreation. Every new break-through of knowledge and technology results in potentially new recreational activities.

OUTDOOR RECREATION FOR AMERICA states, 'When an American looks for the meaning of his past, he seeks it not in ancient ruins, but more likely in mountains and forests, by a river, or at the edge of the sea. From the beginning, one of the strongest currents in American thought has been the idea that the outdoors is a Right of Americans — not only something to be enjoyed but vital to our spirit.'

President Jefferson saw the land as the greatest ballast against the rootlessness of city living, and he hoped that people who lived among the elements, the farmers, would always outnumber those in the cities.

Among other leaders who reaffirmed its values are Thoreau, F. L. Olmsted, John Muir, Theodore Roosevelt, Carl Schurz, Gifford Pinchot, and Stephen T. Mather. This lists only a few of the men who, with their supporters and disciples, kept alive through the years the warning that the American people cannot wander too far from the great outdoors without losing character, strength, and orientation.

As our industrial mills went up and the cities grew, the outdoors seemed the more vital. Today, we have a 35—40 hour week. Pressures are being exerted to reduce this to 30 hours. We will have much more leisure time than anyone could have possibly forecast 10—15 years ago and modern man is going to find it difficult to adjust to this new leisure.

Beginning with the first settlers, Americans have worked hard. They enjoy their work; they work as though life and death depended upon it. The joys of relaxation and leisure have generally not been a part of their traditions. Many early settlers considered it sinful to dance, play cards, or do many other things which were not productive. Until recently, many thought it sinful to submit to relaxation and to enjoy a moment of leisure or to participate in recreational pursuits. Fortunately, for the good of our civilization, this attitude is changing.

The United States is one of the nations most blessed in natural resources. It is growing rapidly. The population and its leisure time are also increasing. Recreational activities are multiplying. Many freedoms, great mobility, and much individual independence is enjoyed. Therefore, it will be incumbent on all of its people to protect, control, and replenish as much as possible of the natural resources.

Rivers, lakes, and shores are becoming crowded with swimming, boating and other water activities. Golf courses, growing by leaps and bounds, are crowded. Millions of acres of parks are being overwhelmed. The world is going through a population explosion. This will be followed by an even greater recreational explosion as automation increases national developments.

Recently, LIFE magazine reported that '10 million Americans have found time to be amateur musicians, 13 million to join adult education classes, 14 million to attend concerts, 17 million to play bingo, 26 million go bowling.' This is only a beginning.

This change brings problems and it is hoped that through the united efforts of government and private institutions, it may be possible to solve them.

LIFE magazine has pointed out, 'that for many uneducated and incompetent people, spare time is not just a bore, but a wounding psychological experience.'

These people cannot enjoy reading or art, for generally they are unimaginative. Leisure time for them only makes them more aware of their short-comings. This is a situation which calls for immediate action. We must direct great efforts to finding a new method of helping them. This will not be an easy task; we must re-evaluate teaching methods and may have to approach the problem with a new philosophy. We must all strive to find ways and means to help our population in finding useful, enjoyable outlets for our increasing leisure time. We, as landscape architects, can and should be in the forefront of this movement. Who is better equipped than we to design, guide, and lead our people in the fulfilment of this new civilization?

In America, there are thousands of acres of recreational facilities ranging from simple home facilities to elaborate city, county, state and federal parks as well as private recreational areas, employing thousands

46
Longs Peak, Rocky Mountain National Park, Colorado.
47
Garden of the Gods, National Forest, Colorado Springs, Colorado.

of people to administer, guide and maintain them. The question arises, are we doing everything necessary to provide an adequate master plan for continued maximum use of these recreational facilities? Are we taking precautions to eliminate the spoilage of thousands of acres of our natural resources, such as strip ore mining as found in the Mesabi Range in Minnesota; the thousands upon thousands of acres of strip coal mining in Pennsylvania and other similar despoilments which blot the American landscape? These operations could be done with a little more imagination and result in making these stripped areas fine recreational grounds for future generations.
We have gone far too long on the assumption that our lands and natural resources are inexhaustible. We have been working with no concern for the future. I am happy to report we are awakening to this need. Within the past five years a number of states, east, west, north, and south, have passed control measures and imposed restrictions and fines on this despoliation. With the intercession of many of our government agencies as well as those of many private groups and individuals the tide has turned. Some states now require performance bounds guaranteeing acceptable plans for future development. We are beginning to see the light — as the poet Browning stated — 'The best is yet to be.'
Within the past few years the American government, realizing the need, enacted a Public Law which set up a bipartisan Commission to '... preserve, develop, and assure accessibility to all American people of present and future generations such quality and quantity of outdoor recreation resources as will be necessary and desirable for individual enjoyment, and to assure the spiritual, cultural, and physical benefits that such outdoor recreation provides; in order to inventory and evaluate the outdoor recreation resources and opportunities of the Nation, to determine the types and location of such resources and opportunities which will be required by present and future generations...'
The report of this Commission entitled 'Outdoor Recreation for America' which was submitted to President John F. Kennedy in January 1962 is perhaps the most comprehensive documentation ever produced, of outdoor recreation in America — its history, its place in current American life, and its future.
Those of us in the profession of landscape architecture, are pleased to note that the report adequately covers the past but is more directly concerned with the future. The past can only point out our glaring thoughtlessness. What we do from now on will determine the future of recreation in America.
President Kennedy in his message on Conservation, to the Congress of the United States on March 1, 1962, put the position very clearly when he said:
'As our population expands, as our industrial out-put increases, and as rising productivity makes possible increased enjoyment of leisure time, the obligation to make most efficient and beneficial use of our natural resources becomes correspondingly greater. The standard of living we enjoy — greater than any other nation in history — is attributable in a large measure to the wide variety and rich abundance of this country's physical resources. But these resources are not inexhaustible — nor do they automatically replenish themselves.
We depend on our natural resources to sustain us — but in turn their continued availability must depend on our using them prudently, improving them wisely, and our possibly restoring them promptly.'
The Bureau of Outdoor Recreation was created as a result of recommendations which the Outdoor Recreation Resources Review Commission submitted to Congress and the President on January 31, 1962, after a three year study. The Commission recommended (1) establishment of a National Outdoor Recreation Policy; (2) guidelines for management of outdoor recreation resources; (3) expansion, modification, and intensification of outdoor recreation programs; (4) establishment of a Bureau of Outdoor Recreation; and (5) a Federal grant-in-aid program of the States.
On April 2, 1962, Secretary of the Interior Stewart L. Udall established the Bureau of Outdoor Recreation in the Department of the Interior. The Secretary made the new Bureau responsible for —

1 Coordination of related Federal outdoor recreation programs;
2 Stimulation of and provision for assistance to the States in outdoor recreation;
3 Sponsorship and conduct of outdoor recreation research;
4 Encouragement of interstate and regional cooperation in outdoor recreation;
5 Conduct of recreation resources surveys; and
6 Formulation of a nationwide outdoor recreation plan on the basis of State, Regional, and Federal, plans.

BUREAU OF OUTDOOR RECREATION PROGRAM

There are seven main aspects of the Bureau of Outdoor Recreation's program. These are:

1 Preparation on a continuing basis of a nationwide recreation plan;
2 Development of technical and financial assistance programs with the States and their subdivisions;
3 Coordination of Federal outdoor recreation programs;
4 Conduct of recreation resource surveys;
5 Research in outdoor recreation;
6 Outdoor recreation education and interpretation;
7 Miscellaneous projects in outdoor recreation.

Outdoor recreation in America today is a major land use. It involves over a quarter of a billion acres of public land and

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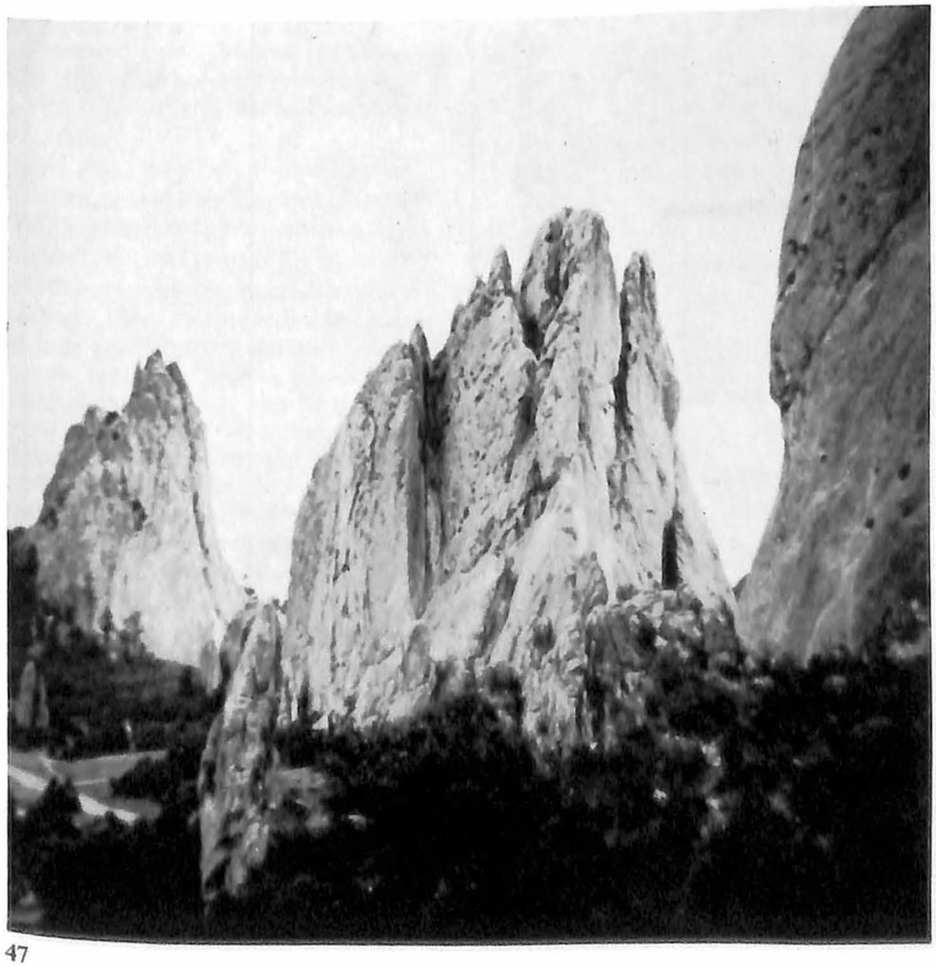

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perhaps as much private land. Over ninety percent of the population participates annually. A twenty-million dollar-per-year industry is based on outdoor recreation. Annual public expenditure for outdoor recreation is a billion dollars more. Americans each summer seek the out-of-doors on four and a half billion separate occasions.

There are in the United States about twenty-four thousand recreation areas with some two hundred eightythree million acres of land. Of these, fifteen thousand are small areas such as roadside and picnic grounds.

Unfortunately, most of this acreage is where the people are not.

One-sixth of this area is in sparsely populated Alaska.

Twenty-two percent (22%) of the remainder is in the West where only fifteen percent (15%) of the people live.

Four percent (4%) is in the Northeast where twenty-five percent (25%) of the people live.

Twelve percent (12%) is in the North Central region where thirty percent (30%) of the people live.

Thus it is obvious that the problem of proper utilization and the possible overcrowding of recreation areas near urban centres is of great concern.

For the sake of better planning and more efficient use of these areas the Outdoor Recreation Resources Review Commission recommends a series of classifications of landscape recreation areas, which are listed here with their particular characteristics:

CLASS I — HIGH DENSITY RECREATION AREAS

These areas are characterized by a high degree of facility development, which often requires heavy investment. They are usually managed exclusively for recreation purposes. Developments may include a road network, parking areas, bathing beaches and marinas, bath-houses, artificial

lakes, playing fields, and sanitary and eating facilities. Such developments provide a wide range of activities for many people. They are particularly suited for day and weekend use. Although subject to heavy peakload pressures at certain times, they often sustain moderate use throughout the year.

These areas are generally located close to major centers of urban population, but they also occur occasionally within units, such as national parks and forests, remote from population concentrations. There are no specific size criteria, and there is great variation in size from one area to another.

Class I recreation areas are commonly held under municipal, county, regional, or State ownership. Many commercial resorts have similar characteristics and collectively provide a significant portion of Class I opportunities.

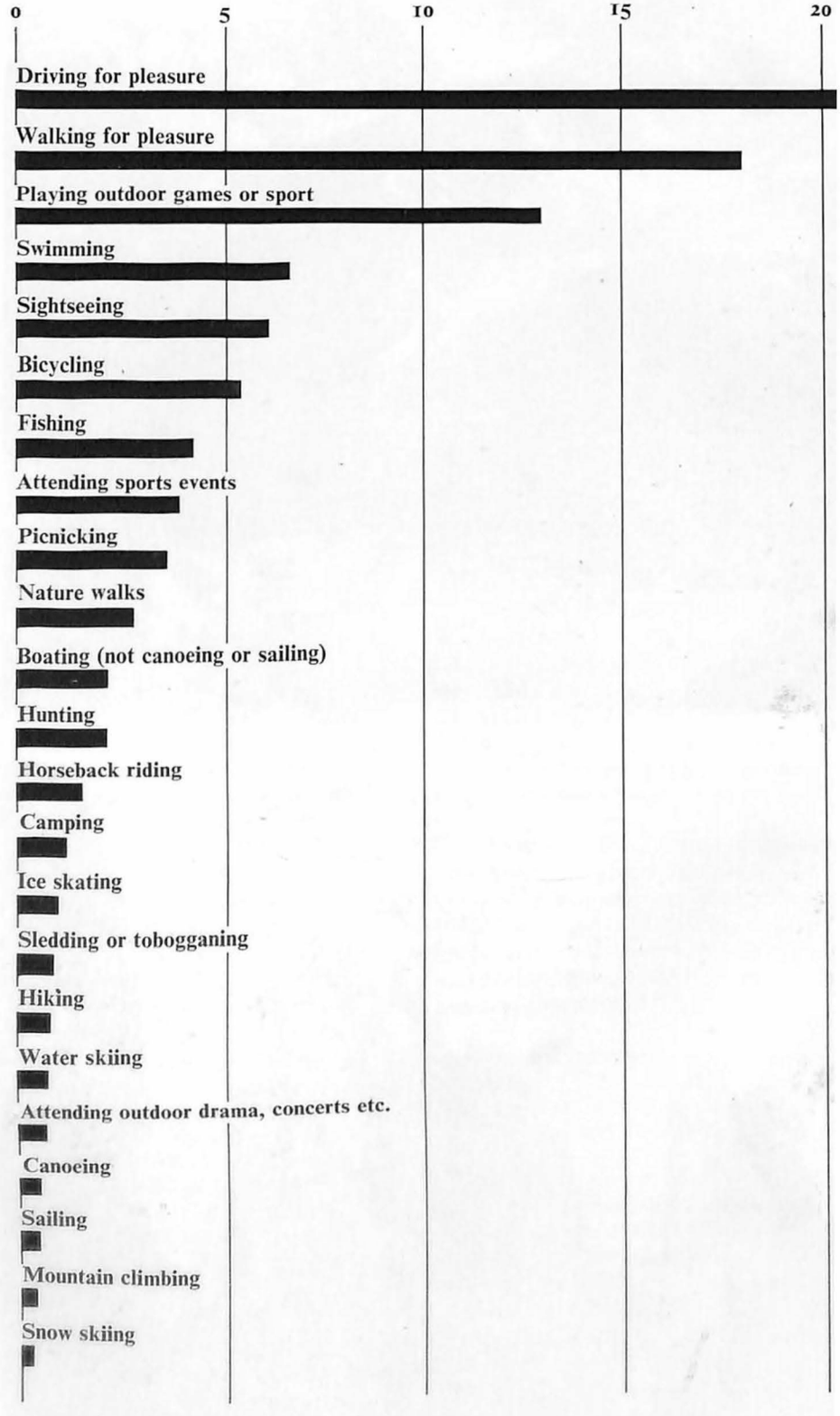
Typical examples of Class I areas are portions of Palisades Interstate Park, New Jersey and New York; Jones beach, New York; parts of the Cook County Forest Preserve, Illinois; Huntington Beach State Park, California; Patapsco State Park, Maryland; the beach and boardwalk area in Atlantic City, New Jersey; and the Colter Bay recreation center in Grand Teton National Park, Wyoming.

CLASS II — GENERAL OUTDOOR RECREATION AREAS

Class II areas provide a wider range of opportunities than Class I sites and usually involve more extensive, less crowded use. Their special feature is the ability through development of facilities to sustain a large and varied amount of activity, such as camping, picnicking, fishing, water sports, nature walks, and outdoor games. They are found under both private and public ownership and accommodate a major share of all outdoor recreation. Included are portions of public parks and forests, public and commercial camping sites, picnic grounds,

AMERICAN RECREATIONAL ACTIVITIES

Expressed as 'Activity-days-per-person' (12 years old and over) 1960 to 1961



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Facts taken from 'Outdoor recreation in America'

trailer parks, ski areas, resorts, streams, lakes, coastal areas, and hunting preserves. These areas range in size from several acres to large tracts of land and are popular for day, weekend, and vacation use.

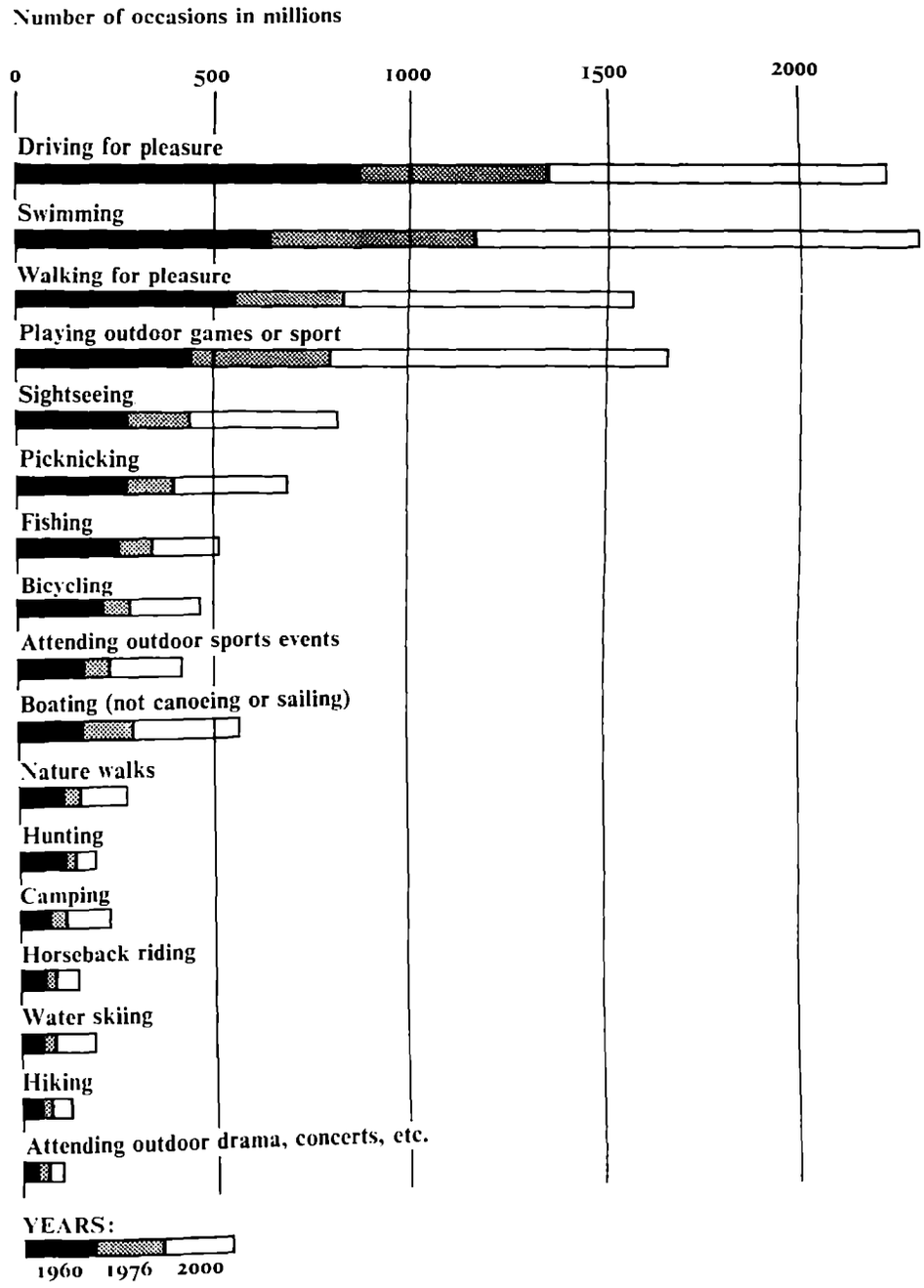
Class II areas encompass a wide variety of physical resources that have been or can be developed and managed to provide a diversity of recreation experiences. One of their distinctive characteristics is that they are always equipped with some man-made facilities, which may have only the barest necessities for sanitation and fire control or they may have ample and carefully planned facilities such as cabins, hot and cold running water, laundry equipment, and stores. There may be a museum and a small library. Entertainment may be furnished. There may be playing fields for children and sometimes for adults.

Trailer parks may have the same conveniences as those on the outskirts of a city. Ski areas may have permanent lifts and buildings that provide for rest and refreshment. At lakes, reservoirs, and seashores, there may be well-equipped marinas, which provide not only boats but gear for fishing, skindiving, and water skiing. Summer homes may be shacks or palaces. Hunting preserves may provide lodges for their members and guests. Dude ranches and luxury hotels may provide more than the comforts of home.

The wide variety of activities and facilities characteristic of general outdoor recreation areas (Class II) requires that management objectives be stated in very broad terms. Many factors, particularly the nature of the resources and the prospective demand, must be taken into consideration in determining for what purposes these areas will be used and how intensively they will be developed.

Public areas in this class should be managed to provide a wide range of outdoor opportunities in a relatively natural setting. The principle of activity zoning

TREND OF PARTICIPATION IN OUTDOOR SUMMER RECREATION



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Facts taken from 'Outdoor recreation in America'

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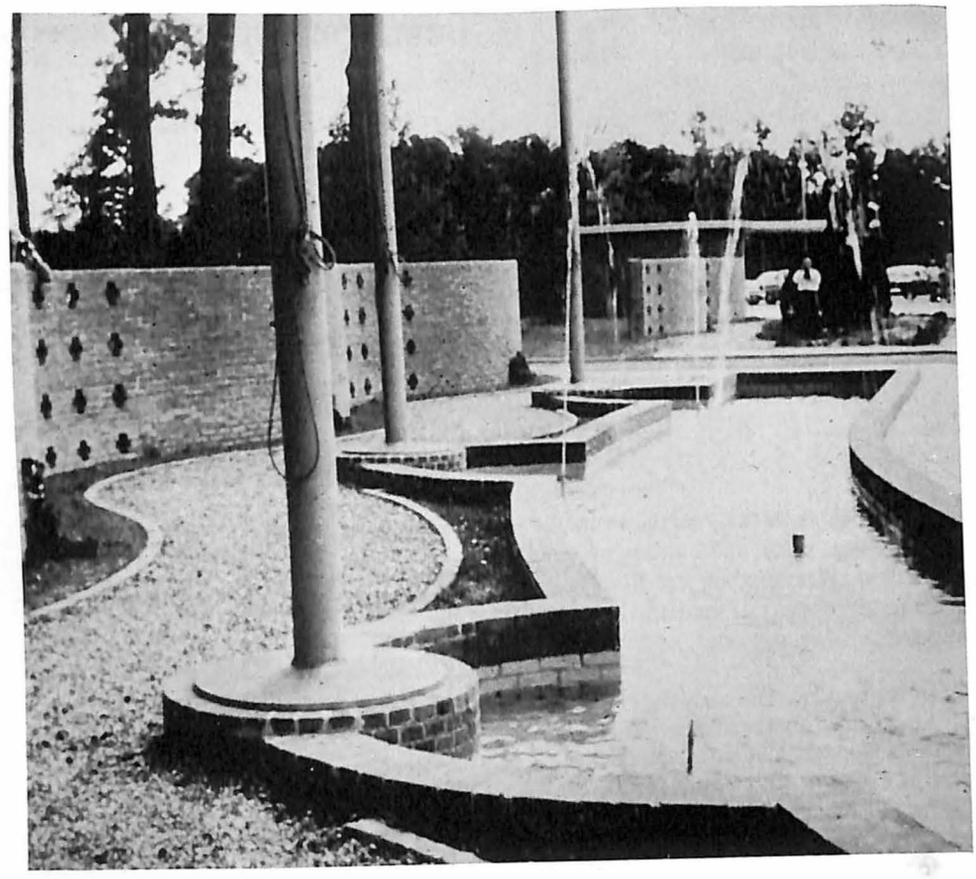
Historic Site: Serpentine wall and foundations at the Reception Pavilion, Jamestown, Virginia (Architects: Smith and Ballou).

51
Regional distribution of population, area and recreation acreage, 48 contiguous states 1960



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should be utilized within Class II areas to reduce conflicts among recreation activities, such as between swimming and motorboating, or between camping and field sports. Facilities and services should be dispersed to maximize use of the entire area.

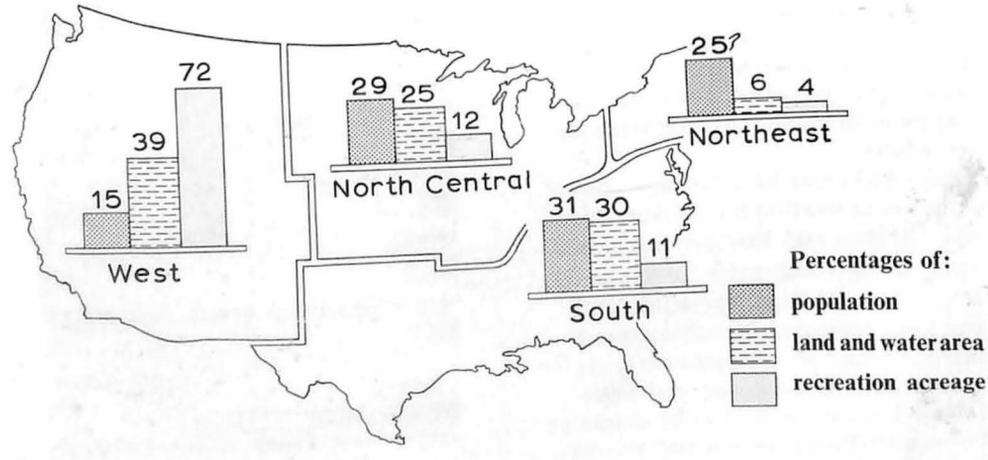
Future needs for outdoor recreation, particularly in the growing metropolitan areas, will create pressures for more general (Class II) and high-density (Class I) recreation areas. Portions of many state and local parks and forests have potential for greater development and use as Class II and occasionally Class I areas. These possibilities should be explored with full consideration of other recreation as well as nonrecreation values that might be lost through extensive development of Class I and Class II activities. A balance among the several classes should be sought.

CLASS III — NATURAL ENVIRONMENT AREAS

Resources in this class represent a transition between general (Class II) and primitive (Class V) areas. The primary recreation management objective should be to provide for traditional recreation experience in the out-of-doors, commonly in conjunction with other resources uses. It should encourage users to enjoy the resource 'as it is', in a natural environment in which man had to fend largely for himself.

Class III areas occur throughout the country and in terms of acreage constitute the largest class in both public and private ownership. They commonly support grazing, lumbering, or mining, in addition to recreation. There are also many areas in national and State parks managed exclusively for recreation purposes that involve primarily enjoyment of the natural environment. Despite this limited use, the types of outdoor recreation experience provided qualify them for inclusion in Class III.

There are no size criteria for areas in this



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52
The Redwoods, Cathedral Forest, Murr Woods, San Francisco, California.

52

class, which may include an entire ranger district in a national forest or a similar area in a national park or privately owned timberlands. Many areas suitable in part for assignment to this class, such as portions of the Allagash country of northern Maine and cutover areas in the northern Lake States, have been repeatedly logged, but their natural characteristics remain relatively unchanged. This in part distinguishes them from Class II resources. Public lands of this category often adjoin unique natural (Class IV) and primitive (Class V) areas in national and State parks and forests, as is the case in the Grand Teton National Park and the Superior National Forest.

Typical recreation activities are hiking, hunting, fishing, camping, picnicking, canoeing, and sightseeing. In contrast to Class II areas, planning and development in Class III areas should emphasize the natural environment rather than the provision of man-made facilities. Developments on Class III sites should include provision of access roads, trails, and basic but not elaborate improvements necessary for camping and related activities. Comparable types of development on private lands should be encouraged.

Many extensive areas of land, both in public and private ownership, are capable of providing recreation opportunities of this type in harmony with other uses. The only special measures necessary would be for fire control, safety, and the prevention of vandalism. For example, some areas might be temporarily closed to the public during periods of extreme fire hazard, or public use of logging roads might be stopped while logging operations are in progress.

CLASS IV — UNIQUE NATURAL AREAS*

This class consists of individual areas of remarkable natural wonder, high scenic splendor, or scientific importance. More than one such area may be included in a single large administrative unit, such as a national park or forest. The preservation of these resources in their natural condition is the primary management objective. Adequate access for the enjoyment and education of the public should be provided wherever consistent with the primary objective.

The scenic sites and features included in this class are limited in number and are irreplaceable. They range from large areas within Yosemite Valley and the Grand Canyon to smaller sites such as Old Faithful in Yellowstone National Park; Old Man of the Mountain, New Hampshire; the Bristle Cone Pine Area in the Inyo National Forest, California; and parts of Cape Cod.

The size of unique natural areas (Class IV) will depend upon the physical features of the central attraction. In general, the areas should be of sufficient size to ensure an appropriate atmosphere and to protect the unique characteristics. They will often occupy only part of a national or State park or forest or other sizeable administrative unit. Under some circumstances, the 'line of vision' concept should be used in determining the desirable size of areas in this class, that is, inappropriate developments would not be visible from within a Class IV site. Extensive natural landscapes usually would not be considered Class IV.

In recent years, parts of many unique natural areas have been subjected to extremely heavy use, which will tend to increase. If the quality of these resources is to be maintained under such pressures, stringent management regulations will be required. The kinds and amount of use that the areas can sustain are limited, and there is a critical point beyond which further use brings about deterioration. This point will vary from one site to another, but in all cases the recreation activities that can be permitted must be measured in terms of the preservation of the particular site, rather than in terms of

* There are certain resources of this type which are and should be maintained purely for scientific research purposes. These 'Natural areas' are not available for outdoor recreation and are therefore not included in this classification system. However, the Commission wishes to underscore the importance of maintaining such communities and to lend its support to their establishment.

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National Historic Site: Williamsburg Palace, Williamsburg, Virginia (Landscape Architect Arthur A. Shurcliff).

public demands.
Through limitation of the kinds of recreation activity permitted, the amount of appropriate uses might be expanded significantly. For example, by exclusion of food and lodging facilities from the immediate vicinity of the central attraction, undesirable and damaging crowding can be reduced and all activity focused upon enjoyment of the outstanding natural features of the particular site. This management policy would permit a larger number of people to benefit from the values for which the resource was initially selected and dedicated.

CLASS V — PRIMITIVE AREAS
The essential characteristics of these areas are that the natural environment has not been disturbed by commercial utilization and that they are without mechanized transportation. Their natural, wild, and undeveloped characteristics distinguish them from all other recreation resources included in this system of classification. They may or may not be of the unique quality characteristic of Class IV areas. Size is a limiting factor only to the extent that the area must be large enough and so located as to give the user the feeling that he is enjoying a 'wilderness experience' — a sense of being so far removed from the sights and sounds of civilization that he is alone with nature. The size will vary with different physical and biological conditions and will be determined in part by the characteristics of adjacent land. Size will also vary in different parts of the country.
Areas in this class are inspirational, esthetic, scientific, and cultural assets of the highest value. They, and they alone, satisfy the longing to leave behind for a time all contact with civilization. Fortunately, they are a resource of which the country of America still has an abundant supply and which it can afford to preserve from other uses for the benefit of future generations. At the same time, it must be recognized that there are some areas which meet the physical requirements of this class but which for economic and social reasons are more valuable for some other purposes.

CLASS VI — HISTORIC AND CULTURAL SITES
These are sites associated with the history, tradition, or cultural heritage of the Nation which are of sufficient significance to merit their preservation. Many are already under the jurisdiction of the National Park Service, State and local agencies, and private organizations. They are of local, regional, and national importance. Examples are the Hermitage, Mount Vernon, the Civil War battle areas, the historic Indian dwellings in Mesa Verde National Park, and the Picture Rocks in Michigan.
Although these resources do not provide outdoor recreation opportunities in the usual sense, they are closely associated with vacation travel, and hence are included in this classification system. The primary management objective should be to effect such restoration as may be necessary, to protect them from deterioration, and to interpret their significance to the public. Suitable access and prevention of over-use are equally essential.

CHOOSING BETWEEN CLASSES
Most areas can be used for more than one purpose. When this is the case, several factors should influence the decision as to the best classification for any given area. Physical characteristics, location, economic and social considerations, and public needs for different kinds of recreation activity and for other uses of natural resources, together with the objectives of the owner, must be analyzed and evaluated in making a choice.
Mount Vernon could be placed in Class IV to assure its preservation as a historic shrine, or it could be placed in Class I (high-density recreation areas) to provide mass recreation for the people of the Washington metropolitan area. All of the virgin timber in a national forest could be placed in Class V (primitive areas) to prevent its ever being cut, or appropriate areas could be assigned to Classes II, III, and V (and perhaps to Class IV) so as to open them to a wide variety of recreation and other uses. Opinions may easily differ as to whether a given area is so unique in some respect that it should be placed in Class IV (unique natural areas) and subject to only a limited form of recreation use, or whether it should be placed in Class II (general outdoor recreation areas) and Class III (natural environment areas) so as to provide a variety of recreation uses and perhaps other uses.
In extreme cases the decision is not difficult. Few, if any, will argue that any historic shrines should be turned into 'Coney Islands'; that no more virgin timber on public lands should ever be cut; or that concrete roads should be built into, and elaborate campgrounds developed within, established wilderness areas. There are, however, many situations where the best use, or combination of uses is not obvious. Decisions must then be reached by responsible planning and managerial agencies in the light of all relevant facts and considerations.
Recreation has played an important part in the moulding of American life. The wide use and enjoyment of natural resources will continue to be an invigorating influence on American people. It was the world renowned photographer, Steichen, who, two days from his 85th birthday, stated, in effect, that *for man to be happy he must always be in consonance with nature.*

National Parks in Japan

For the biography of the editor see page 30

The concept of setting aside large areas of natural countryside for permanent conservation by central government as NATIONAL PARKS is not new, although many countries have only recently accepted the principle. The United States of America, for instance, established the Yellowstone National Park in 1872, while the first National Parks in Britain were only designated in 1951.

The idea of large natural areas reserved for public use caught the interest of the Japanese people as early as 1911, when a project to make Nikko a 'Natural Park' was submitted. The law recognising National Parks was however only passed in 1931 — twenty years later, but still very much earlier than many other countries were in recognising the importance of landscape preservation.

Between 1911 and 1931 the government undertook a preliminary survey of potential areas for a national parks system, and as a result of the interest which this aroused in natural science bodies, as well as in economic and political circles, an association was started which became the National Parks Association.

Following the passing of the Act, surveys of specific areas of natural beauty were undertaken and in three years three national parks were designated. Five more designations followed within the year and by 1936 the number of National Parks had reached 12.

Designation of 12 areas was a noble beginning, but the practical measures necessary to define, protect, maintain, equip, and provide access to these areas was a much greater problem, and it was a project which was granted a very low priority in economic allocations during the years of Sino-Japanese troubles which followed. Not only were no more designations made, but it proved impossible to execute the proposals made for the 12 named Parks.

Then, in 1941, the Pacific zone of the Second Great War exploded into action, and all cultural activities were virtually suspended. As a result of such setbacks, when the war ended with the Surrender in 1945, — almost ten years after their designation — the twelve National Parks had little more than a notional existence. Faced with the destruction of whole cities, and the chaotic upheaval of all that they valued, the Japanese people found in their inherent love of nature, a new determination to conserve the beauties which their country still possessed. A wave of enthusiasm for the peaceable, cultural and lasting aspects of life made itself evident. In terms of the conservation of nature this was expressed in the expansion of the National Parks by changes in the boundaries of existing parks and surveys of new areas. Between 1946 and 1956 thirteen designations were made, but by the combining of some of the smaller parks under a single name, the total reached was 19. These covered an area of one and three-quarter million hectares (4,314,000 acres) about 4.8% of the total area of the country. Since then, further additions to the National Parks System have brought the area very near the 2 million hectare mark.

By around 1950 it was realized that the great variety in the areas of natural beauty in Japan could not be adequately represented by 15 to 20 major parks, nor could these parks alone fulfil the increasing demand for access to natural beauty by the millions of the country's population. To avoid lowering the exclusively high standard of scenic beauty selected for the major parks, it was decided to restrict them in number, but to set up a second category of Quasi-National Parks, which, while fulfilling *part* of the National Parks Law, were not of the same quality. An area is designated as a Quasi-National Park if, while being unworthy of designation as a national park by the quality of its scenery or resources, it is yet worthy of conservation by the government —

being of greater than *local* importance, and expected to have a nation-wide attraction.

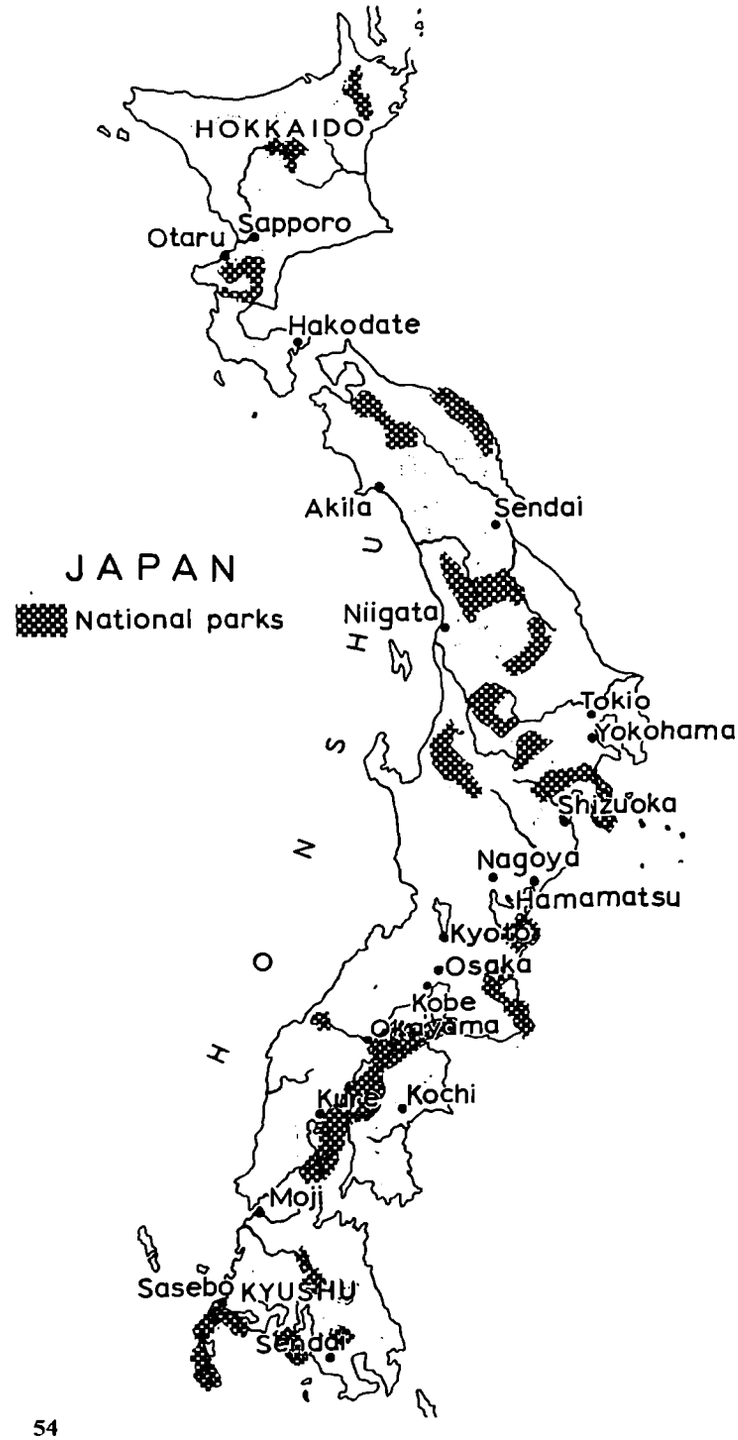
Regarding the National Parks as insufficient, the Prefectures — the local governing bodies of the country — wished to set aside more local 'nature parks' for the benefit of their own regional populations. To cater for these changes, the 'National Parks Law' was abolished in 1958, and a new 'Natural Parks Law' established, which makes provision for National Parks, Quasi-National Parks, and Prefectural Nature Parks. The designation of both former classes is undertaken by the Ministry of Health and Welfare, though only the major parks are administered by central government. The administration of Quasi-National Parks, and the whole responsibility of local parks, fall on the Prefectures.

At the present time there are 21 National Parks, with 2 further proposed; 23 Quasi-National Parks with 2 further proposed, and well over 200 prefectural natural parks.

The designation of National Parks in Japan does not depend upon outright ownership of the land by the government. This is similar to the system in Britain, and some European countries, but differs from that in U.S.A. and Canada where National Parks are state-owned.

A Park may be partly owned by the government and partly in the hands of a great number of private owners. There are of course state controls, but they are imposed upon the private owners in varying degrees of severity according to the importance of the zone in which their land is situated.

The legal process of designation of a *special* area imposes upon the various owners of it many conditions, such as prohibition of tree felling, advertising, land clearance, and the restriction of building, road-making, industrial processes, and any form of development without permission. These special areas are the



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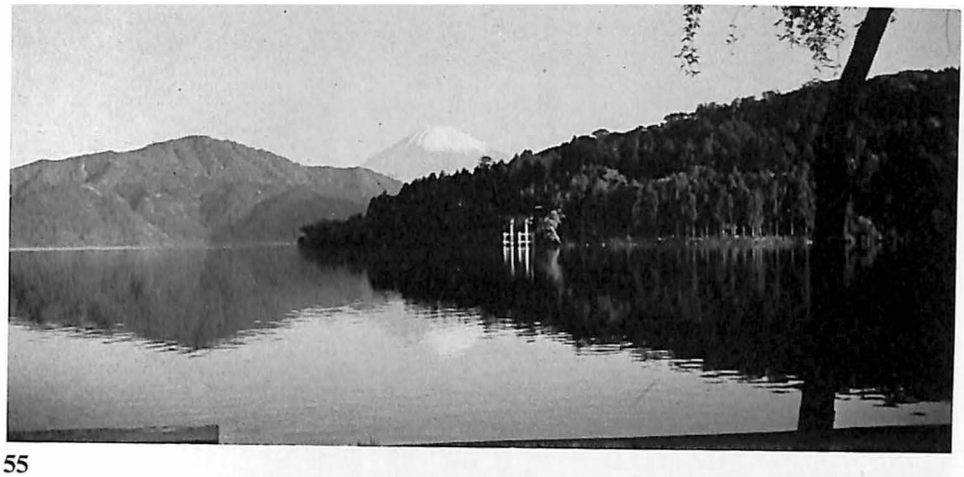

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Mount Fuji seen at dawn reflected in the waters of Lake Ashi. This is one of the most famous beauty spots in the Fuji-Hakome-Izu National Park.

central and most attractive parts of the National Parks and in total amount to about 64% of them. Furthermore, a small part, including the most valuable, and vulnerable areas of particular beauty are classed as *special protection* areas and are subject to even more stringent restrictions. Basic public works in the parks, such as access roads, warden services, and control of visitors are undertaken by the State or public authorities, but recreational facilities, accommodation, and most of the minor facilities for the public are financed and executed by private enterprise. Major roads are the responsibility of the Ministry of Construction, but Toll roads are frequently allowed to be provided and maintained for profit by private owners.
The National Parks have provided the opportunity to preserve the best, or at least representative examples of the unique scenery of Japan. Although the scenery is very varied, through the wide range of climatic zones from north to south of the country, there is a common theme running through the whole chain of islands, and that is volcanic action.
Japan forms a part of the Armillary Pacific Volcanic Zone, and there remain in the mountain chain about 40 active volcanoes in addition to numberless extinct craters. So extensive is this character that only two of the National Parks have topography which is not volcanic in origin. Many of the parks contain several huge calderas, a few have active volcanoes, and there is more than one new volcano which has risen out of the flat plain in the last century.
Secondary effects of volcanic action which attract interest, are high level dammed-crater lakes, solidified lava plugs and streams, and a great number of hot springs, as well as periodic bursts of smoke or steam from craters which are potentially active.
The volcanic origin of the mountains, adds to their scenic beauty in other ways. Far from being bare craggy peaks, they are part of a complicated and intricately confused landscape, containing, even at several thousand feet elevation, lakes, marshes, rivers, waterfalls, gorges. The moist climate ensures a luxurious covering of vegetation over the larger part, even above the timber line, where dwarf pines, lichens and alpine flora compete with swamp and bog plants.
In complete contrast are the Parks and Quasi National Parks comprising the most beautiful parts of the coastal strips and islands. The sea coasts of Japan are heavily indented with bays, rocky inlets, caves and beaches. The narrowness of the country brings the mountains close to the coast so that in places they fall to water level with sheer ingenious cliffs. Large indentations and off-shore reefs almost enclose expanses of sea, island dotted, and for the most part tranquil.
The most well-known coastal region, is, of course, that of the 'Inland Sea' — now the Seto-Naikai National park. This is an exquisite region like a miniature Mediterranean, the site of more than 600 granite islets fringed with white sands and clothed with green pines sitting in a sea of transparent blue. The area is, expectedly, maritime in tradition and transport is water borne, but the scene is not wholly tranquil, for rapid currents are set up by the falling tide which rushes through the narrow sounds causing great whirlpools and waterfalls in the waters of the channels.
Probably the most renowned national park is Fuji-Hakone-Izu, which contains Mt Fuji itself, and the semicircle of five reflecting lakes which surround it. The reverence for Mt Fuji — or 'God of Fire' in the ancient *Ainu* language — has been replaced in modern Japanese by respect for the peerless beauty of its symmetrical cone, consequently any area from which it can be seen takes on a special attraction. Hakone is a volcanic formation of several craters older even than Fuji, and its central caldera lake Ashi-no-ko is the perfect viewing place for the sacred mountain. The hot springs here, as in many other parks have stimulated the establishment of health-resorts and many hotels with the attraction of outdoor heated swimming pools.
The clear distinction between the four seasons which is characteristic of the Japanese climate shows the National Parks in a range of different vestures. Azaleas growing wild, the world-famed cherries and other small flowering trees in natural abundance make the Spring a festival of delicate tints; the contrast of the green deciduous woods, and black pines in strong sunlight and deep shadows with luxuriant growth forced by the monsoon rains characterizes the Summer; nowhere in the world is there a greater range of Autumn colouring through the whole spectrum of Japanese maples, dogwoods and cherries. The mountain areas take on a wholly new character in winter when the clarity of ice and snow is laid over the landscape. The snow covering is very complete and trees stand like regimented snow-men. At this season the parks with winter sports facilities cater for an even greater demand for public recreation.
It is in the field of recreation that the landscape architect must make the best use of his skills. The beauty of the scenery in the National Parks is of such a high quality and on such a magnificent scale that it needs no help from man, and no action is needed except to defend it from human intrusions that would mar its grandeur or debase its scale.
This then is the problem: to cater for public access and public enjoyment without causing physical or visual damage. So far the means have not always been wholly successful. Access roads to the higher regions, though magnificent pieces of engineering and even beautiful in themselves have increased erosion and created scars that will take many years to heal. Cable-car transport has necessitated

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Chuzenji Lake and Kegon Falls in Nikko National Park. This is one of many high-altitude caldera lakes in the volcanic mountain chain. Sharp erosion has given rise to narrow but high waterfalls and dramatically beautiful National Park Scenery.

57
Part of Saiki National Park, western Japan.

58
Small fishing village in the Seto Inland Sea National Park.

pimple-like terminal excrescences on noble hill tops, and communication masts or reflectors have shattered the illusion of wildness in remote areas. Often, the facilities which humanity demands — shelters, cafes, conveniences, car parks, however well designed in themselves, — debase the landscape by a violent change to 'domestic' scale.

Already the pressures by industrial 'progress' upon the natural landscape outside the boundaries of the National Parks are becoming hard to resist in highly populated areas, and consequently the sanctity of the Parks themselves is becoming more valuable. It now remains to be seen whether the government, the committees, the staffs and the landscape architects engaged as consultants can rise to the challenge and keep the Japanese National Parks inviolate while still developing them for the maximum public access and enjoyment.

NATIONAL PARKS STATISTICS

When parks which are still at the planning stage, are added to the number, there will be 23 National Parks covering 5.31% of the total area of Japan, and 28 Quasi-National Parks with an area equivalent to 1.60% of the area of the country. There are also two hundred and forty one Prefectural Parks.

Visitors to the National Parks numbered 39,200,000 in 1953, and this figure had risen to 160 million by 1963 — an increase of four times in ten years. In a period of five years the number of visitors to the Quasi-National Parks doubled; from 43,300,000 in 1958 to 90 million in 1963. There have been similar increases in the number of visitors to the Prefectural Parks.

Estimates based on these trends suggest that by 1970 there will be almost 400 million visitors annually to the National and Prefectural Parks of Japan.

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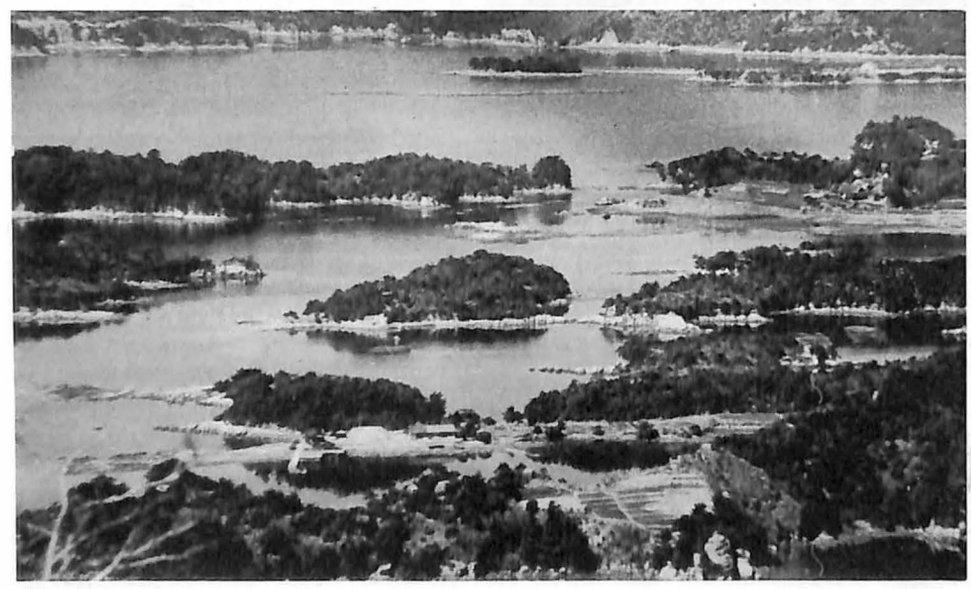

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KURO KANEKO AND MARY MITCHELL

Children's playgrounds in Japan

Kuro Kaneko, Landscape architect; professor at Faculty of Agriculture Niigata University; studied landscape architecture at Tokyo University, and graduated in the Faculty of Agriculture; gained experience in a practical way as children's play leader for Municipality of Tokyo for eight years; has been Head of Yokohama Parks Department. University lecturer and writer with special knowledge and interest in children's playgrounds. Has been Director of Japanese Institute of Landscape Architects; Director general of Japanese Children's Playground Association.

For the biography of Mary Mitchell see page 60

Children's playgrounds are public facilities for children's daily life. Be it a mere playground or a recreation centre for children, the facility is closely and delicately related to the society or the community in which it belongs. Relationship problems of children in society are quite complicated and cannot be solved within the framework of the children's playground itself. At the same time every children's playground has its own appearance unique to the society or the community in which it is situated.

Children's playgrounds were basically initiated to fulfill specific social demands, yet they can be said to have made development in themselves, from within. It would seem that, where they have developed most creatively, it has been solely for the sake of children's welfare itself. Almost all types of children's playgrounds and play equipment seem to have been worked out from the educational standpoint in its widest sense. Showing through the ideas are the goodwill of society and the delicate solicitude of the educationalists and designers, who were purely thinking on children themselves.

If this is so, it may explain the progress in children's playground design in Europe and America, where social conditions have been happier — or at least less severe — in the last 50 years. Examples of new developments in form, type, and use, are the adventure playgrounds of Denmark and Sweden, the water playgrounds of Germany, and the systematic playground activities of Zurich.

What then are the particular problems and characteristics of children's playgrounds in Japan?

The provision of children's playgrounds in Japan can be said to have started just after the great earthquake in 1923, first by modelling after those of Europe, and rather more so, of those of America; and since that time forty years have passed. It is however only ten years since the movement began to make its own way through the particular demands of our society.

This chapter deals with the playgrounds of Tokyo, but these are typical of the rest of Japan. Tokyo, an over-populated super metropolis of modern times, has now reached a state of extreme confusion in every aspect. Scarcely any sort of order or distinct trend is visible. It is therefore interesting, that there are some clear features to be seen in the children's playgrounds of Tokyo.

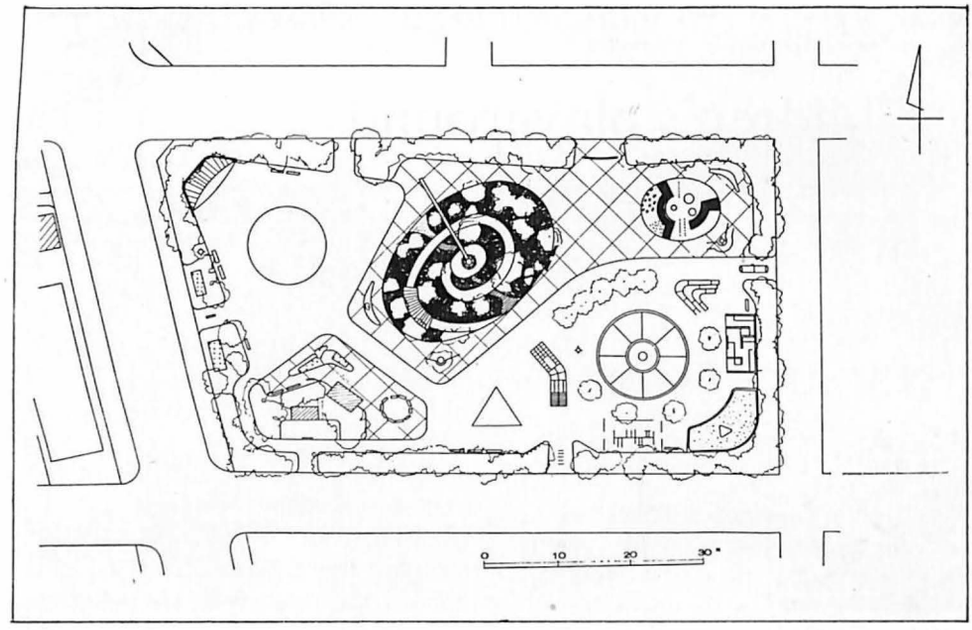
The general situation of open spaces in which children's playgrounds are included, is the first factor to be considered. In the city of Tokyo, which in 1960 had an area of 569.51 Sq.Km. and a population of over 10 million, there are open spaces equivalent to less than 0.51 sq. metres per citizen. This compares unfavourably with:

Osaka	1.10 sq. metres
Kyoto	1.19 sq. metres
London	9.2 sq. metres
New York	11.9 sq. metres

The open spaces in the city of Tokyo number 375 and total 442.97 hectares in area. This total is made up of 73 parks, and neighbourhood parks of 245.32 hectares: 14 playgrounds of 106.35 hectares and 288 children's playgrounds of 71.30 hectares.

Thus there are, in reality almost no large parks, neighbourhood parks nor playgrounds of any consequence in the highly populated parts. In such districts, children's playgrounds may be said to be the only open spaces. So children are obliged to spend all their leisure time in small children's playgrounds, while youths and adults are in a situation where, if they are shut out from children's playgrounds, they have almost no active recreational facilities.

Consequently the children's playgrounds in such areas are named officially 'small public parks' and are open for the public in general all the day and night, though they are furnished specifically as children's playgrounds and used almost exclusively by children.



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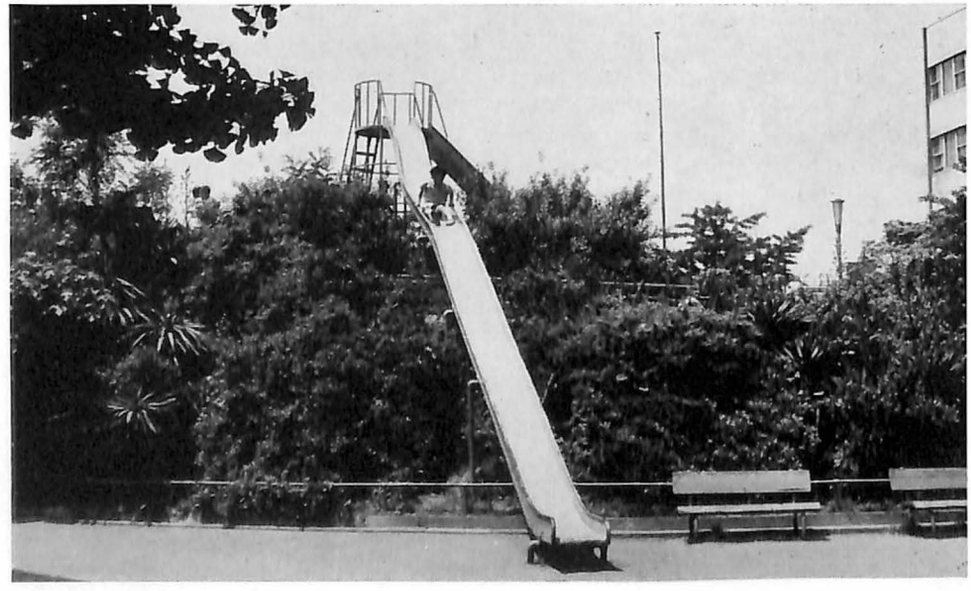

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In spite of this poor quantity of open spaces, in reality most children's playgrounds are still quite far from being over-crowded or even used efficiently. (Though far more children are seen there, than is usual in Europe or in America). Such children's playgrounds are on average 0.25 hectare in area, and are sited at the reasonably effective intervals of 300 metres apart in the redeveloped centre of the city. They are completely unsupervised — as yet there are no recreation or play leaders, nor playground managers. Usually not even a watchman is stationed in the playgrounds.

Being in such situations, the children's playgrounds must satisfy difficult conditions such as:

- how to get in as many children as possible,
- how to keep them as long as possible,
- in the least area allowed.

(The usual demand is for children's playgrounds to be used by as many children as possible, rather than to be used efficiently.)

- excessive solicitude for children's safety is demanded (safety from accident by apparatus, by other children, or even by violent or depraved youths and adults.)

If such conditions are to be satisfied, it means that children's playgrounds are designed from the standpoint of remedying our pressing social defects; — defects caused fundamentally by quite different absurdities of society such as increase of accidents on roads, increase in delinquents, etc. In other words, children's playgrounds in Japan are now being developed by some power from outside, rather than from the standpoint of enjoyment of the children themselves, as may be the case in Europe and America.

As a result, our children's playgrounds have taken forms which may seem to be too concentrated and too specifically allocated to be generally attractive. To illustrate this in a practical way: One of the great needs in children's playgrounds is a reasonably large grass area, where

59
Iriya Minami Children's Playground, Tokyo

60
Iriya Minami Children's Playground, Daito-ku, Tokyo.
This playground, built over 10 years ago, and greatly improved in 1959 was the first playground in Tokyo in the new style. It had many experimental ideas, some of which were more successful than others. It was the first to have a play mound, and probably originated the popularity of these features.
A huge mound from soil dug out during the construction of the underground railway, provides the main attraction of the playground; together with a smaller mound, a hollow, dished out, for roller-skating, and climbing equipment and swings nearer to the boundary.
The main mound, about 60ft. high, is climbed by a path winding up through dense shrub planting, and a flight of steps intersected by the path. Two exciting slides career off from a tabular steel structure on the summit, suspended some 12'6" above ground level of the mound.

base-ball may be played, even by children. (In Japan, base-ball is the favourite game, above all others). In the older playgrounds, play-apparatus is often scattered here and there dividing the area into several small pieces of the ground, none of which is large enough for ball games. In some new children's playgrounds, however, nearly half of the quarter hectare area is enclosed and surrounded by wire mesh for base-ball and batting practice. This experiment, which means the sacrifice of play space for the greater number of younger children, is said to be quite successful in getting many older boys off the streets who might otherwise not be attracted.

The mechanical types of play-apparatus must be made quite small in scale, just suitable for very young children only, in order to avoid being used or occupied by youths and adults (swings are generally only 2m long).

Apparatus that moves with a large momentum, swinging poles etc., should not be used or should be adjusted in order to eliminate the possibility of grave accident, especially because of the risk of it being used by big boys and adults.

Designing for concentration and intensity of use makes these extremely small children's playgrounds very often of tectonic construction, using mainly concrete and iron, and neglecting the unseen but enormous softening effect of soil and plants. In reality, however, children, living in this age of science and technology, and living in the centre of the city, kept apart from nature, tend to feel familiarity with such forms of construction, good or bad, and are unaware of being deprived of contact with natural things.

Playgrounds should attract children first, along the line of creative activity which is a child's natural tendency. Unfortunately children today being continuously under the strong influence of insatiable commercialism, seem to some degree to have their pleasure in creative activity stultified. As a result our children's playgrounds have become rather of a passive character, and in such a form as makes children adapt their play to the standard forms of apparatus. Play sculptures, though introduced in many playgrounds, have lost their original meaning. Unfortunately Tokyo has not yet any adventure playgrounds in their true, creative form, because of local situations and conditions.

Landscape architects, however, who are the only leading figures in this field in Japan, have made great efforts to adapt their ideas to such difficult conditions, and with some spirit of resistance to the absurd demands of society. They have succeeded in some degree in working out some new ideas for new type playgrounds along more logical lines, (though there may be strict and severe critics from the pure standpoint of children's welfare and education), and some of these are illustrated in Fig. 59-77.

Some of the problems to be faced, in the rational design of children's playgrounds may be mentioned:

1 Unity, or at least close collaboration between all authorities concerned with the welfare and training of children should be achieved. Too many authorities are concerned with various parts of children's welfare and none of them takes a dominating or wholly active part in problems of children's play.
Sometimes there is no connection between them. In the construction and management of playgrounds, parks departments are of course quite active. But in so far as it concerns children themselves or activities of children, the matter will exceed their competence, and very often the fundamental needs of children seem to be of little interest for them.

2 Getting play-leaders and organizing a play-leader system are urgent needs. Before the war, there were a few in action, but today no system of education or training of children's playground leaders exists.

3 How to lead children nearer to nature in an extremely small children's playground should be considered. Merely including some natural object to be looked upon may not be enough in this case.

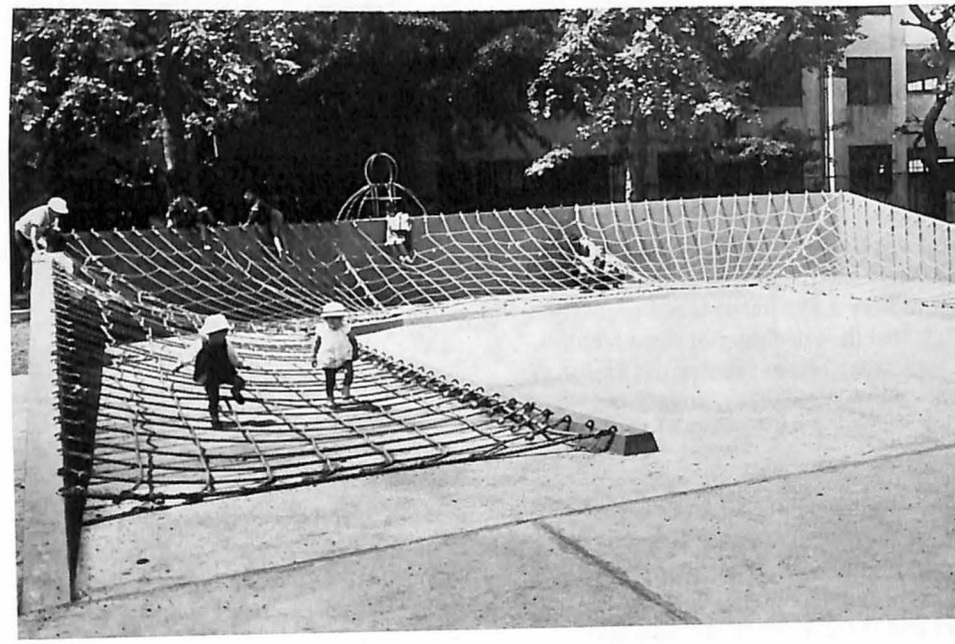
4 Some large natural areas should be provided, not so far from the city. Lack of feeling for nature may perhaps only be combated by taking children in childhood to a natural landscape.

5 The reconstruction or major improvement of old-fashioned playgrounds into new and exciting modern styles is vitally important.

6 A series of quite different types of playground in a district should be considered. A recent example of this method shows a remarkable increase in children's attendance in total, and a surprising expansion in the radius of their activities.

7 The provision of recreation facilities specifically for youths and adults is extremely urgent. This is of course important in itself, for the benefit of the older section of the community, but also *essential* for the good management of children's playgrounds; which can then be devoted solely to the needs of the appropriate age groups.

Mary Mitchell, Landscape architect; studied horticulture at Wisley R. H. S. Gardens and Edinburgh Royal Botanic Garden; studied landscape architecture at School of Planning, University College London, and was pupil to Richard Sudell. Assistant landscape architect, Stevenage New Town; landscape architect City Architects Department, Birmingham, working on schools, old persons homes, housing estates, etc.; specialized on children's playgrounds and collaborated with Lady Allen of Hurtwood on publications on playgrounds. Now in private practice as landscape architect; member of I.L.A. Council.



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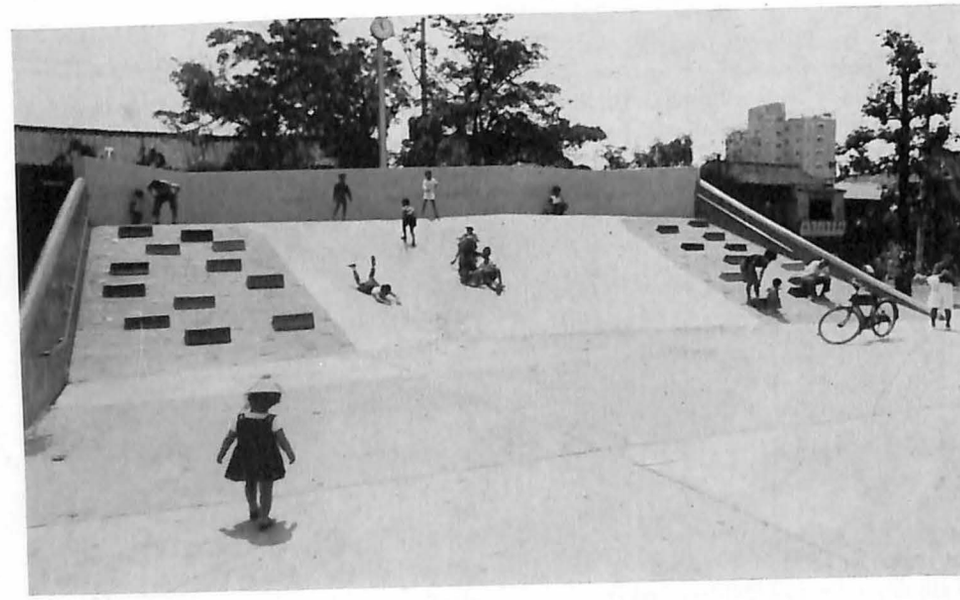

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Tsukishima Dai ni playground, Chuo-ku, Tokyo.
Constructed 1925, but reconstructed in 1963 with new forms of apparatus. Small open spaces like this are developed as playgrounds in poor, overcrowded areas, and areopen to the street. A simple layout with dense boundary planting which helps to mask the noise and dust of traffic. Tubular steel equipment provides amusement and exercise for hundreds of eager children. Even if only temporary, these small pockets of ground can be tremendously valuable as playground until there is further development.

63
Tsukishima Dai Ichi playground, Chuo-ku, Tokyo. Another playground with some novel equipment.

64
Seika children's playground, Daito-ku, Tokyo.
Constructed 1951 and reconstructed in 1960. This was the second playground to have a concrete 'mountain'. The mound here is so large, and its effect as play apparatus, so remarkable, that the enjoyment for children is greater than could have been imagined. The remainder of the apparatus is more functional, and the playground as a whole is not very artistic.

65
Higashikurume Housing Estate, near Tokyo. This playground, in a dense housing area, has a very architectonic layout, which will soften later as the few trees grow to a tall overhead canopy.

66-67
Toyoshiki Housing Estate, near Tokyo. This estate has a playground with a small mound which grows to an exciting spire. Nearby, swings, climbing ropes and covered sand pit, are grouped into a pleasing composition by the metal 'box' framework that unites them.

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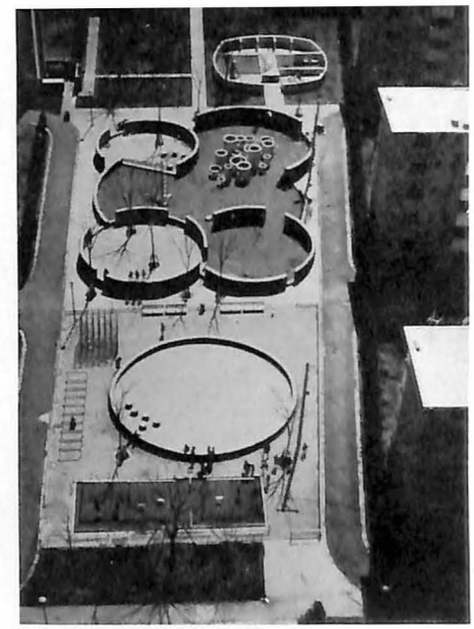

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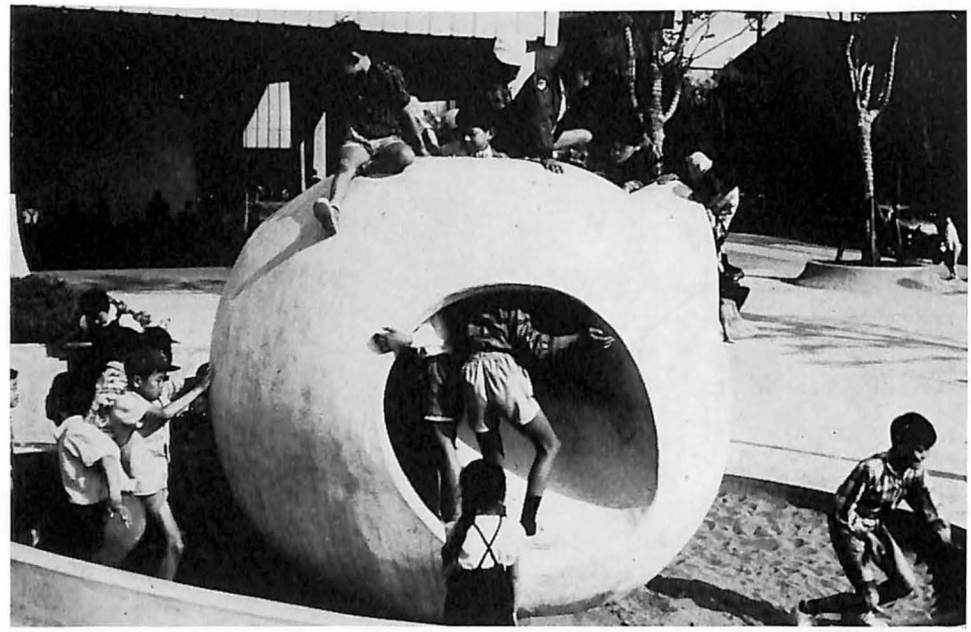
68, 70
Mitake Children's Home, Tokyo.
Harmony of architecture and landscape is the keynote of the Home and its playground, designed by Architect Tange, and Landscape Architect Hayashi, and one of the most impressive schemes in Tokyo.
Simply, yet boldly conceived, the home is finished in exposed aggregate concrete panels, set within a carefully constructed landscape. Studios, music rooms, libraries, indoor play rooms are lively throughout the day with all age groups of children, who come and go with complete freedom, and seem remarkably well-behaved. Set individually within the general scheme are push-button models in well-designed show cases which demonstrate aspects of transport, industry, the Post Office, and so on.
The careful modelling of the playground as part of the overall landscape design provides an area of play barely visible from the road, sheltered by the subtle shaping of the exterior bank, and softened by grass and mature trees. Hard landscaping in concrete and tarmacadam surfaces with a variation of levels, makes for interesting contrasts of forms and textures. There is, however, not a great deal of planting, and the playground has been called too techtonic.
Modelled into the landscape — its primary function as a playground taking precedence over that of a mere architectural composition — the play-centre provides maximum functional play and pleasure for hundreds of children. Even the siting of W.C.'s has been carefully planned in relation to position and to the children's needs.
The principal play-sculpture is globular, has openings large enough for the children to clamber through and over, and is set in a hollowed-out area, surfaced with sand and retained by low curved concrete walls. Sand pits and various types of climbing equipment are sited in sheltered pockets so that the younger children can play in peace, undisturbed by roller-skating and the general hum and activity around them. Perhaps the most popular feature is the fine bowl-shaped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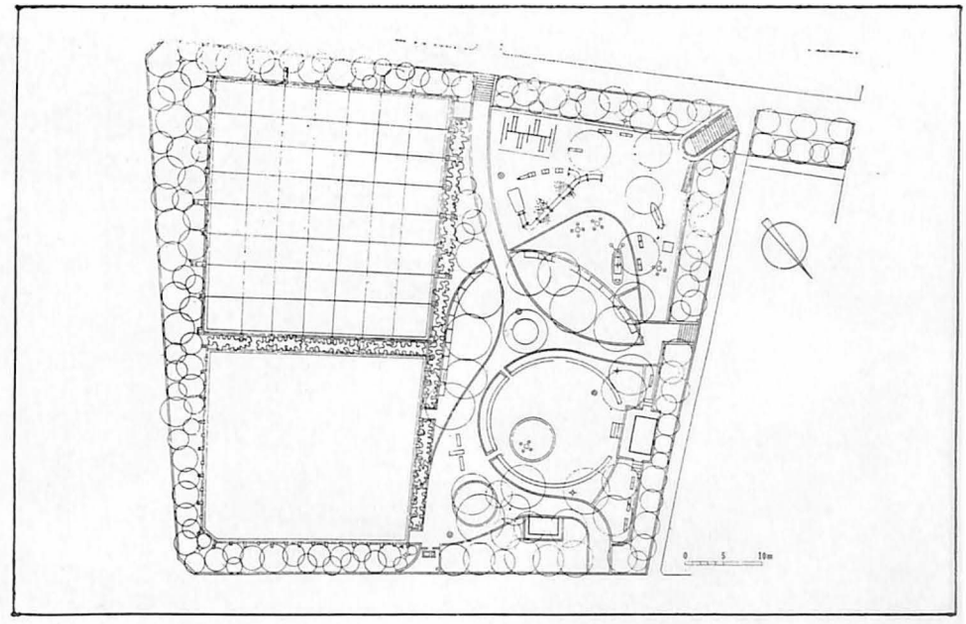
mound, surfaced in concrete, with a smooth inside surface which provides endless fun for children sliding up and down the face. A short cut to the top of the mound via the slippery surface challenges the adventurous, while the more cautions may climb the sides assisted by foothold blocks.
The Mitake Children's Home is unique, both as an example of integrated architecture and landscape, and as an ideal play and educational centre within Tokyo's crowded city.

69, 72, 73, 75
Teppozu Children's playground, Chuo-ku Tokyo.
Opened in 1935 but re-designed and re-constructed in 1962. This playground, sited near a primary school, caters for an average of 200 children, rising to a maximum of 400 at any one time, within the 1 to 11 age group. Although small, it is imaginatively designed, variously equipped, and proves to be one of the liveliest and most entertaining centres both for child and visitor.
Perforated egg-shaped play sculptures provide the children with endless scope for exploration and games of hide-and-seek. Concrete climbing walls from 3 to 5 feet high, set with holes, test the children's sense of balance. Slides are set out from banks and carefully shaped to avoid hard landings. This is one of the most interesting and successful playgrounds, and one of its most exciting features is the
mound, surfaced in concrete, with a gently sloping face and backed on the steep side with rounded stones, concrete plugs, and metal hoops, enabling children to climb up one side and slide down the other.

71
Otsuka Kubomachi Children's playground Bunkyo-ku, Tokyo. This playground which was built in 1951 and broadly reconstructed in 1964 is probably the first playground to have permanent facilities for base-ball and catch-ball. It also has many pieces of fixed imaginative equipment such as doll's house, train and ship in concrete, and a 'jungle-gym' climbing frame in animal form.



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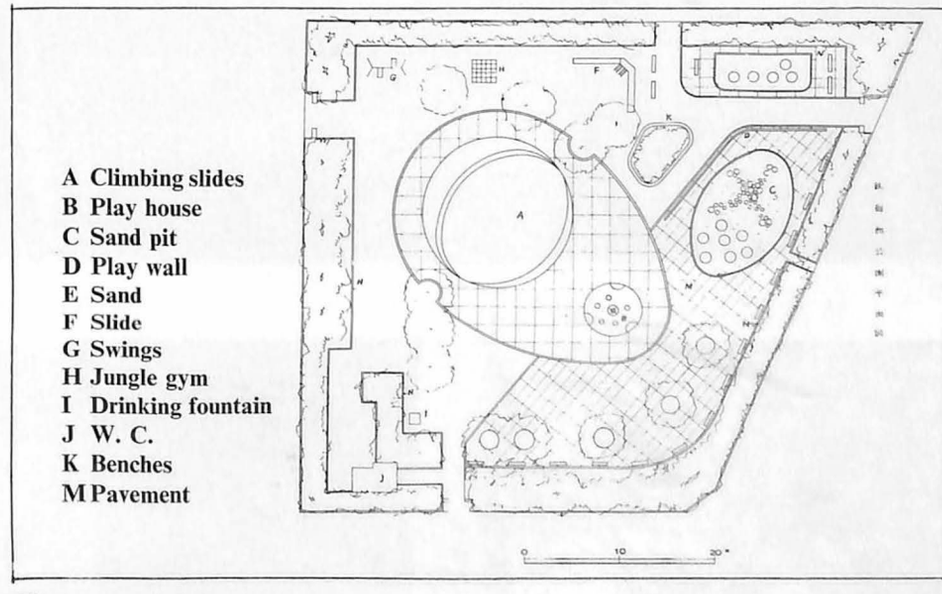

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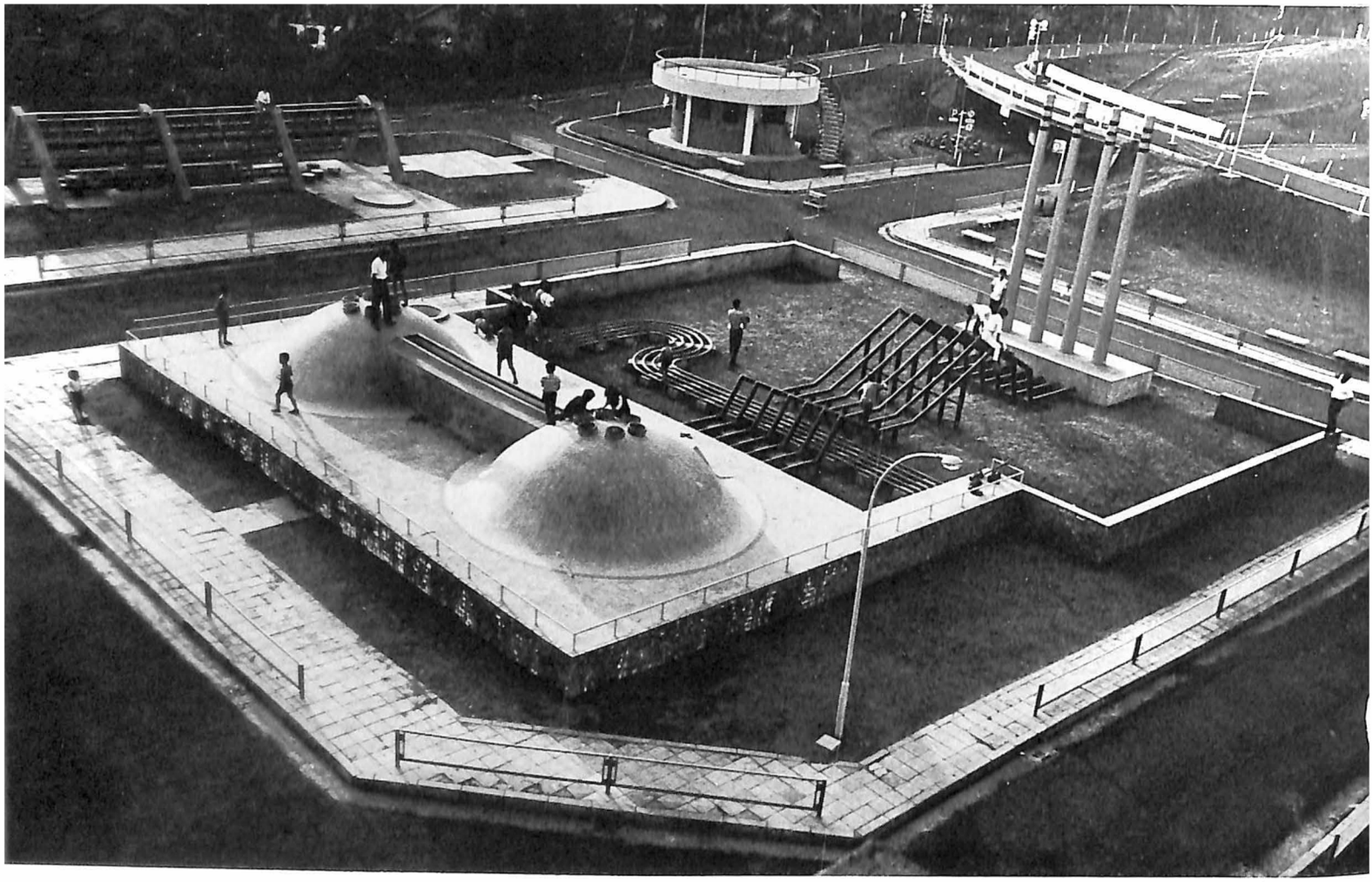

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74, 76, 77

TOKYAMA TRAFFIC PLAYGROUND

Garden lights

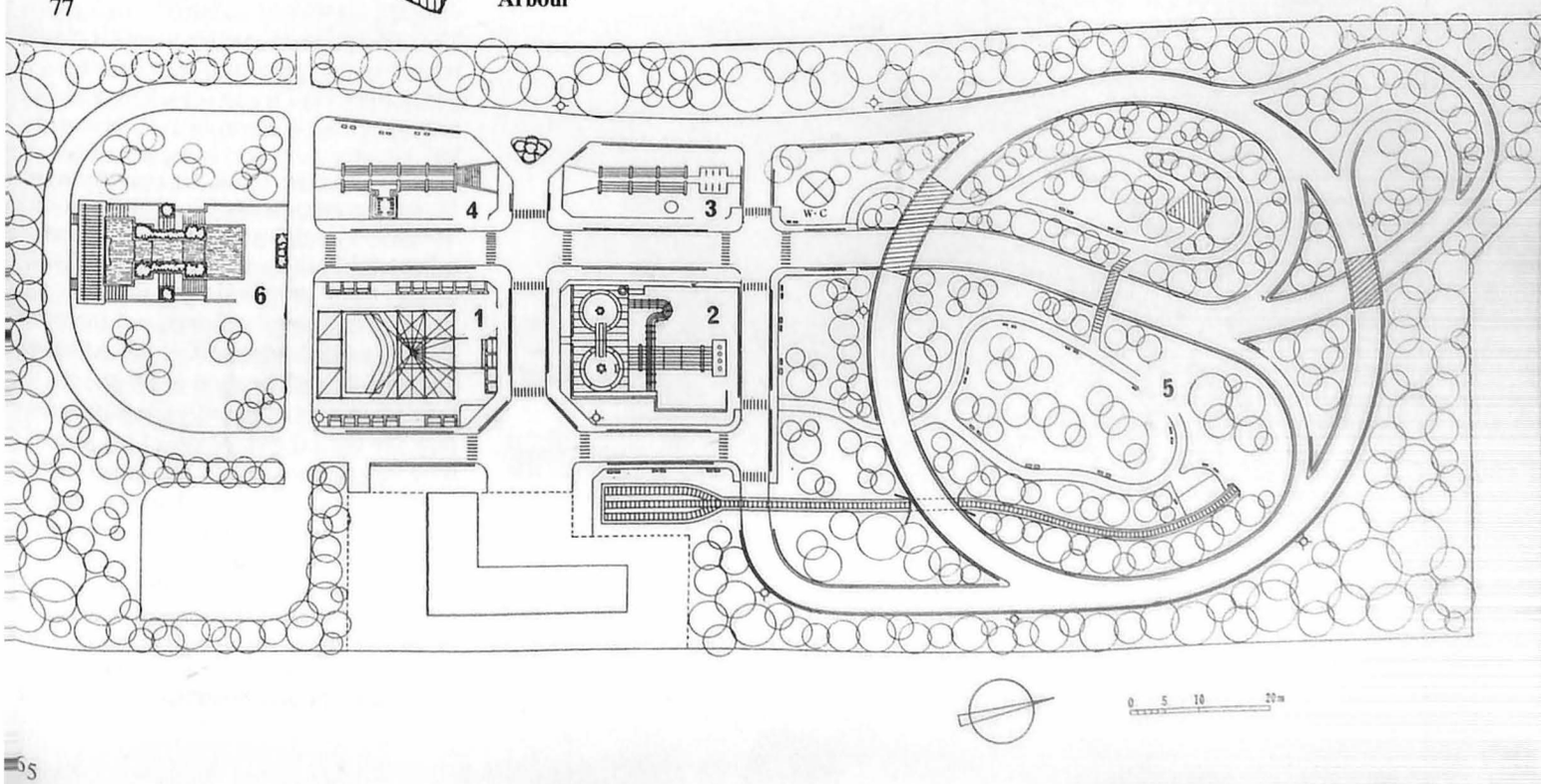
Fences

Bridges

Arbour

1 Commercial District
2 Industrial District
3,4 Residential Districts
5 Suburbs
6 Formal Park

77



DEREK LOVEJOY

New towns in Great Britain

Landscape and new towns

Derek Lovejoy, architect and landscape architect; town planner; work as architect in private practice and local government (L.C.C.); took M.L.A. degree at Harvard. Now in private practice in U.K. with work overseas also; Landscape consultant to new capital city of Pakistan (Islamabad); has been for ten years on Council of I.L.A., and for six years Secretary-General of the International Federation of Landscape Architects.

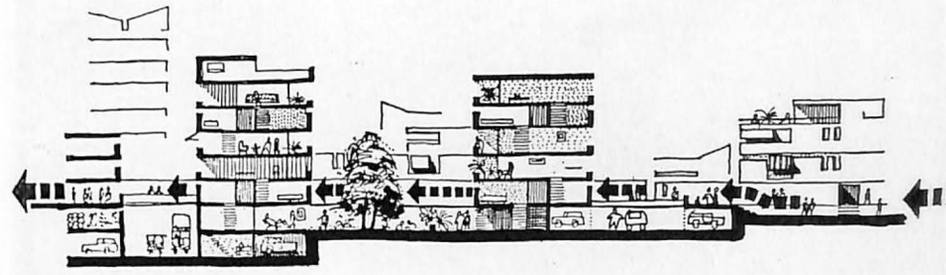
The industrial revolution in Britain brought great prosperity to many sections of the community but at the same time left in its wake towns and cities with such bad environmental conditions that some of the slums that were created are among the worst in a civilised world.

In the past two decades planning in Britain has made some remarkable achievements in order to attempt to rehabilitate industrial cities and part of the planning process has been the creation of new towns.

To study the planning developments which led to the new towns movement in Britain one has to look back into history to early attempts to limit the size of cities. One of the earliest measures often quoted is the 1580 Act of Elizabeth I by which building within 3 miles of the City of London was prohibited, though the probable purpose of this act was to save agricultural land near to the town and to provide a barrier to the spread of fire and disease.

The conception of satellite towns is closely related to the 'green belt' principle by which the size of a city is limited, and its urban expansion controlled. 'Green girdles', country-, or rural belts, were first mentioned in the 1890s. In 1898 Ebenezer Howard published his 'Garden Cities of Tomorrow' (originally titled 'Tomorrow: a Peaceful Path to Real Reform') which, among many proposed agricultural, financial and social reforms, put forward the two related principles of limitation of city growth, and creation of off-shoot towns in a ring of countryside surrounding the central city. Many of his ideas were misunderstood or wrongly applied — particularly the term 'garden city' which as originally conceived meant a city-in-a-garden, and his recognition that people were attracted to the most pleasing aspects of both town and country was interpreted as advocating a low density neutral town-country hermaphrodite, which most city suburbs eventually became.

78
Hook New Town. Ground level bus stops with ramp, escalator and lift to pedestrian deck
79
Hook New Town. Section through 100 p.p.a. residential area showing pedestrian levels
79a
Hook New Town. View of north end of central area, housing and lake



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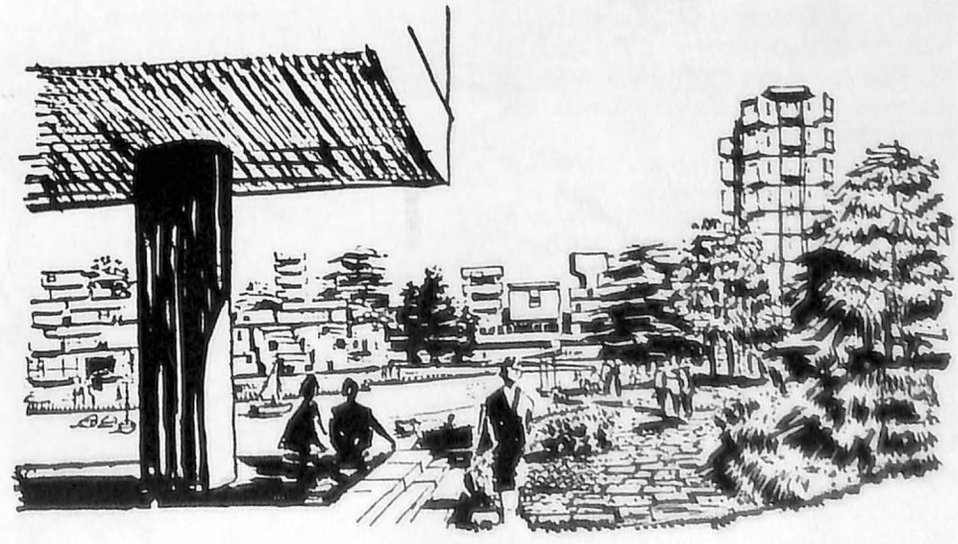

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The establishment of a barrier of countryside around and between towns to prevent them merging into each other did not find practical expression until the passing of the London Green Belt Act of 1938, but in fact, the creation of satellite towns preceded the implementation of the green belt principle by many years. The first garden city on Howard's principles was started at Letchworth in 1904, and was followed by Welwyn Garden City in 1919 but these were the only two examples to be created in the 50 years following the publication of Howard's ideas. Even these tended to revert to dormitory suburbs rather than the self-contained working communities envisaged by him. By the end of the 1939—1945 war the London Green Belt was established and the needs of an expanding metropolitan population led to the first wide acceptance of the satellite principle when London's new towns on the outer periphery of the green belt were postulated by the first New Towns Act. These were: Stevenage, Hemel Hempstead, Hatfield, Harlow, Basildon, Crawley, Bracknell, (Welwyn Garden City was recognised later as also a 'New Town'). In other parts of England, Wales and Scotland six further towns Corby, Newton Aycliffe, Peterlee, Cwmbran, East Kilbride, Glenrothes, were designated to take overspill from other large conurbations or to serve local industries.

These early new towns all followed to some degree the garden city principles. They were built to densities, which, if not really *low* were certainly much lower than usual city densities, and have since been criticized for contributing to urban *sprawl*.

Although it was generally conceded that the London green belt was a success, it remained the only one of its kind. Development plans produced by planning authorities often indicated land as zoned for agriculture, or unallocated for any specific purpose, but nothing like a com-

plete city green belt was established other than around London.

In 1955 a new town was designated in the hinterland of Glasgow, to be known as Cumbernauld. This was an intermediate step towards a more urban type of town. It introduced higher densities and moved away from the 'neighbourhood' principle which characterized the earlier examples. Its intensive commercial centre took as a fundamental principle the segregation of motor cars and pedestrians.

Although Cumbernauld led the way, it was not until the designation of Skelmersdale in 1961 that a 'second generation' of new towns began to be planned. These have moved even further away from the open 'neighbourhood' concept and have attempted to create a stronger 'urban' sense. One of the most marked changes from earlier plans is the location of industry in several small zones instead of in one large 'black' area. This, of course reduces the distance of daily travel to work for the majority of workers, and it has been found that modern industrial processes — particularly of light industries are rarely offensive.

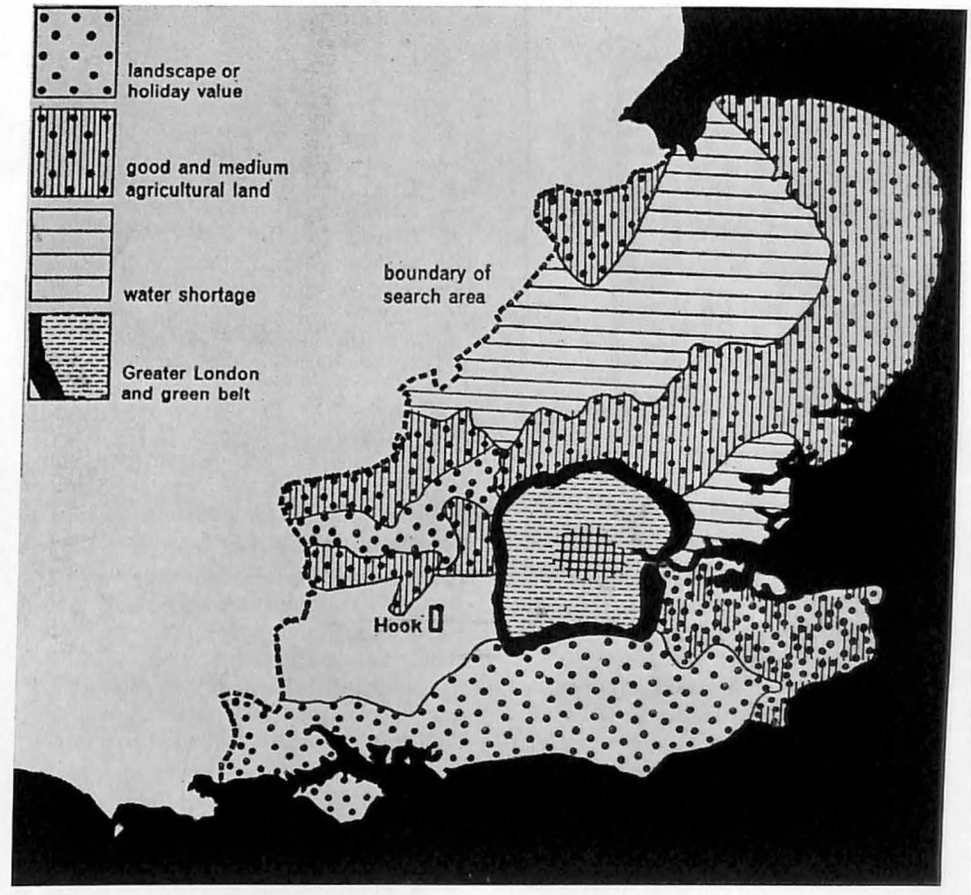
There are now 7 of the 'second generation', started or designated, making a total of 21 new towns altogether. Nothing comparable with this enterprise has been attempted so far, in any other country. It is the British Government's present policy to establish more new towns in order to assist in accelerating the urban renewal programme.

Since the Act of 1946, each new town has been planned and built by a Development Corporation appointed by the Government. The finance for the development is obtained by loans from the Government which are repayable over a period of 60 years. The second 'New Towns Act' of 1959 established a 'Commission for the New Towns' and it is now the practice to hand over these new towns, on completion, to this special body which administers their affairs.

80

NEW TOWNS AND GREEN BELTS IN GREAT BRITAIN

81
Hook New Town: Limitations on the area of search, and the position of the site in S.E. England.
82
Attractions of the Hook site.



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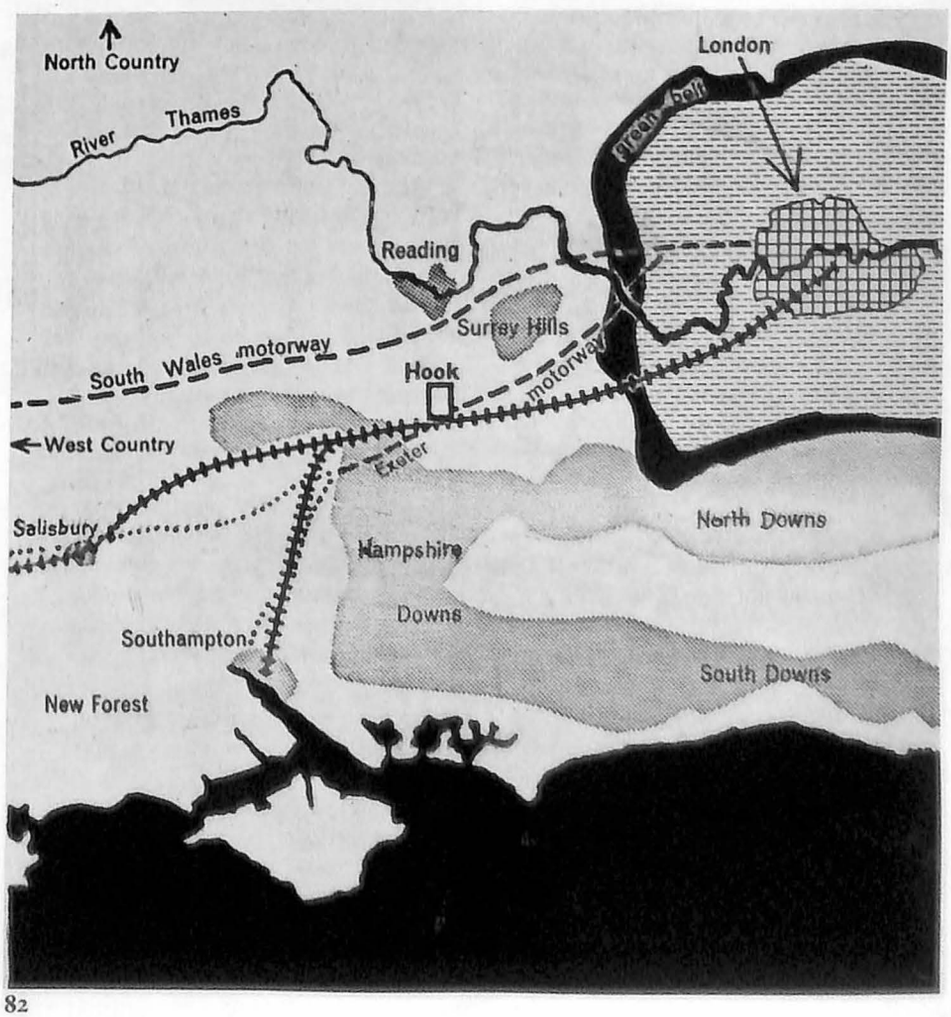
HOOK NEW TOWN

POLICY

In about 1957 the London County Council decided to build a new town themselves in order to provide accommodation for their overspill population. The Council's Officers and Consultants spent a considerable amount of time and money preparing the designs for such a town at Hook in Hampshire. However, the Local Authority, Hampshire County Council, in whose areas the town is located, preferred and suggested instead major town expansion schemes at Andover, Basingstoke and Tadley and it was found that homes for Londoners could be provided more quickly by these schemes than by the creation of a new town on a virgin site. A great deal of work had been prepared on the Hook project before a decision was taken in mid 1960 to undertake these alternative schemes instead. Many of the proposals had reached an advanced stage of detailed design and the L.C.C. felt that, although the actual project was abandoned, the work was of sufficient merit to advance the standards of proposed New Towns in Britain. It was therefore decided to publish full details of the scheme, in a book entitled 'The Planning of a New Town' (London County Council 1961). The design of the new town of Hook is the result of outstanding collaboration between the Architect, Town Planner, Landscape Architect and Engineer.

How often has the Landscape Architect felt aggrieved that he has been called in after major planning decisions have been made and without an adequate opportunity to contribute to the basic physical planning of the town. Here in the Hook scheme this co-operation has been obtained, and the result is a testament to this comprehensive team of experts. As will be seen in all of the sketches, the environment which would have been achieved is to a standard rarely attained in other comparable developments.



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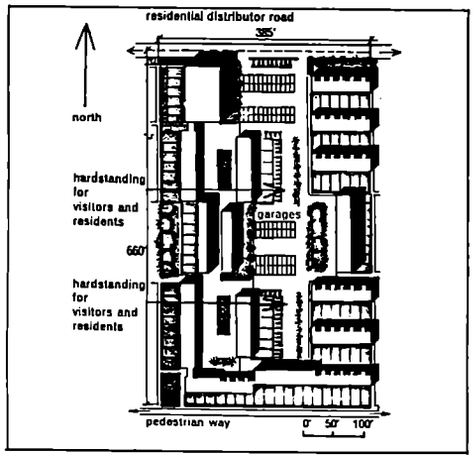

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83
70 p.p.a. Hook cul-de-sac group.
84
Hook New Town Master Plan (at ultimate stage of development).
85
First town diagram, showing form and disposition of main town functions.
86
Second town diagram showing initial idea as amended after consideration of local factors.

SITING OF THE TOWN

The selection of the site in such a congested country as Britain is an extremely complex matter. Britain is a very highly populated country which imports a considerable percentage of its foodstuffs. Consequently good agricultural land is at a premium and a site had to be found which would not conflict too severely with agricultural interests. The new town would have to be sited where it could be adequately drained, where sufficient water could be obtained conveniently and all rail communication excellent. Above all, the area should be attractive to industrialists whom it was hoped could be persuaded to move from London to the new Town. It was desirable that areas of very high amenity value should be avoided, and that it should be of sufficient distance from the great conurbations of Birmingham and London to avoid competition and coalescence.

It was particularly important that the new town should be well away from the influence of London and established on the principle of being a supporting and not merely a dormitory suburb. Some 70 areas and locations were examined in the process of elimination to find a suitable site, and eventually the ideal location was found to be in the region of an existing community called Hook. Fig. 81. illustrates a diagrammatic plan showing the possible site for the new town and Fig. 82 illustrates the potential advantages of the site.

GENERAL PLANNING PRINCIPLES

For many reasons it was decided that the ultimate population of the new town should be 100,000 persons and the planners advising the London County Council set out three fundamental principles which should be followed in their design. These principles have resulted largely from the experience of the many other new towns in Britain. It was decided not to follow established principles such as neighbourhood units located in close proximity to the town centre. A completely fresh approach to the problem was made and it was considered that a linear pattern of town where nobody would have to walk more than 15 minutes to the town centre, would be ideal.

It was decided that the town should have a coherent structure easy to understand and that it should be of an urban character rather than of the garden city approach.

It was felt that there should be a strong division between city and country and not a compromise. The central area development would be fully integrated with the housing and designed as the main pedestrian meeting place served but not dominated by the motor vehicle. This was accomplished by building over most of the car parking areas and so avoiding the isolation of the central area by a ring of car parks.

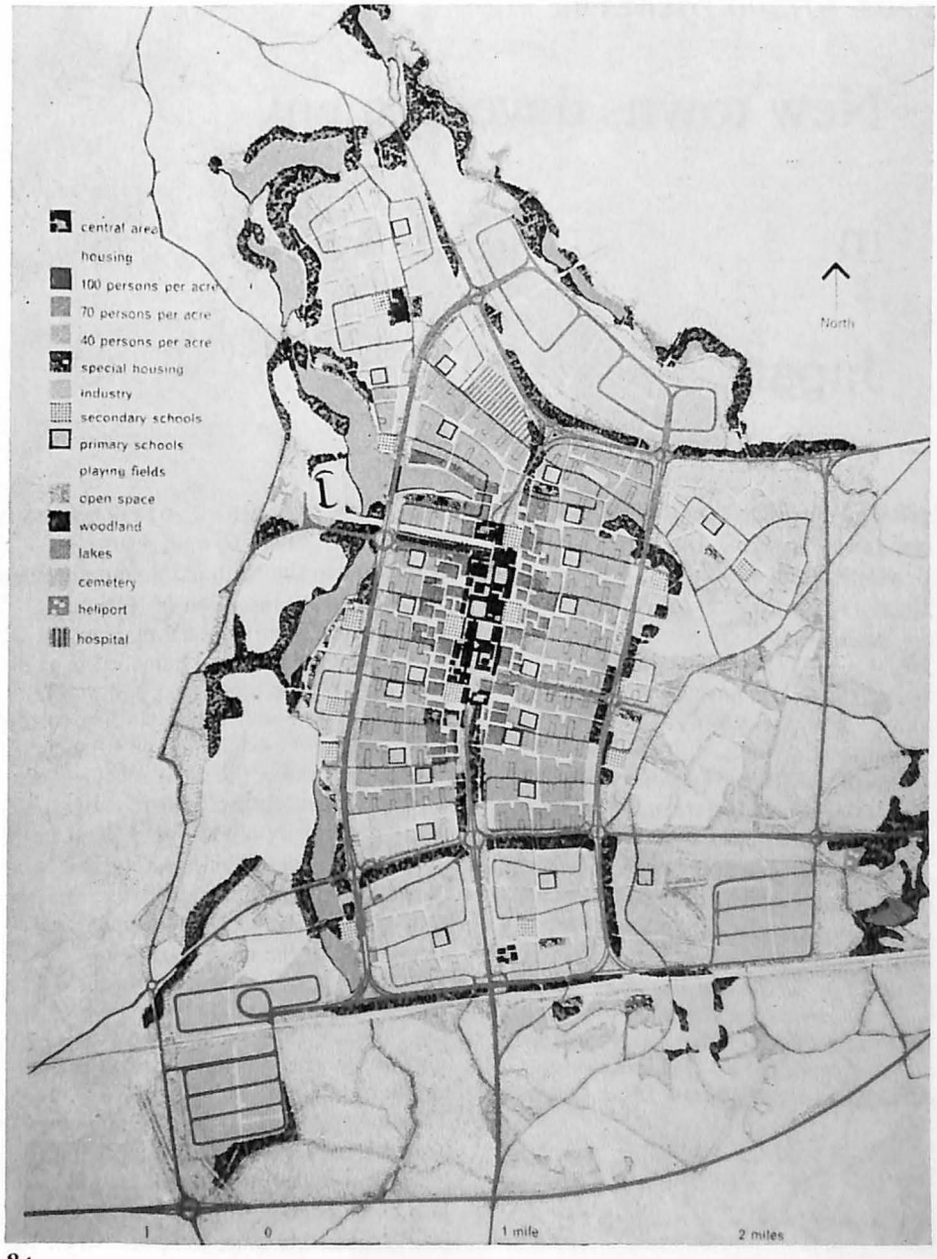
A planning deficiency of a number of early new towns in Britain was ignoring the necessity for segregation of vehicular and pedestrian traffic. (A notable example of this is Crawley New Town where on busy shopping days chaos persists). The highest practical degree of pedestrian and vehicular segregation with precedence given to the pedestrian had been planned for the new town. An independent main pedestrian circulation system had been designed to extend throughout the town. Separation in plan is largely horizontal but in the central areas, where car parks are covered, separation is vertical.

Every effort was made to achieve the balance of population in relation to each group, family structure, and employment, in order to avoid 'second generation' problems.

THE MASTER PLAN

The master plan based on the above principles produced a concept or ideal for the possible form of the town bearing in mind potentialities and limitations of the site. Fig. 85 illustrates the ideal concept of the town and Fig. 86 illustrates the main layout of the town as amended after consideration of local factors. It was decided that the size of the town could be anything between 3,000 acres and 5,100 acres if it was to sustain average residential densities of 100 persons per acre. The fixed area of non-residential use would never be less than half the town total area whereas the residential area could be anything between a half and two-sevenths of the total. This meant that if residential density was increased it would have only a limited effect of reducing the area of the town assuming that multi level planning and dual land use were not possible over the town as a whole, but only over a relatively small area in and around the centre. Assuming a circular town, the effect of taking the largest total town area with the lowest average residential density in preference to the small town area is only to increase the *radius* of the circle by 19% although this *area* is increased by 42%.

The whole of the built up area of the town is some five miles long and has an average width of two miles. A magnificent valley forms the western boundary of the built up area and is retained and developed as the 'town fields' containing the greater part of the major public open space and playing fields, stadium and a chain of lakes. The largest of these is 52 acres and nearly a mile long and extends to the central area. It will be a major landscape attraction and is designed for bathing, rowing and sailing activities of the town and adjoining region. A chain of lakes extends along the valleys and forms the backbone of the continuous ring of playing fields and open spaces surrounding the whole town. The plan provides for some 48,000 of the 60,000 residents of the inner town to be housed in a continuous system of residential areas at average net densities of 70 persons to the acre. The remaining 12,000 residents will be housed in and immediately around the central area.



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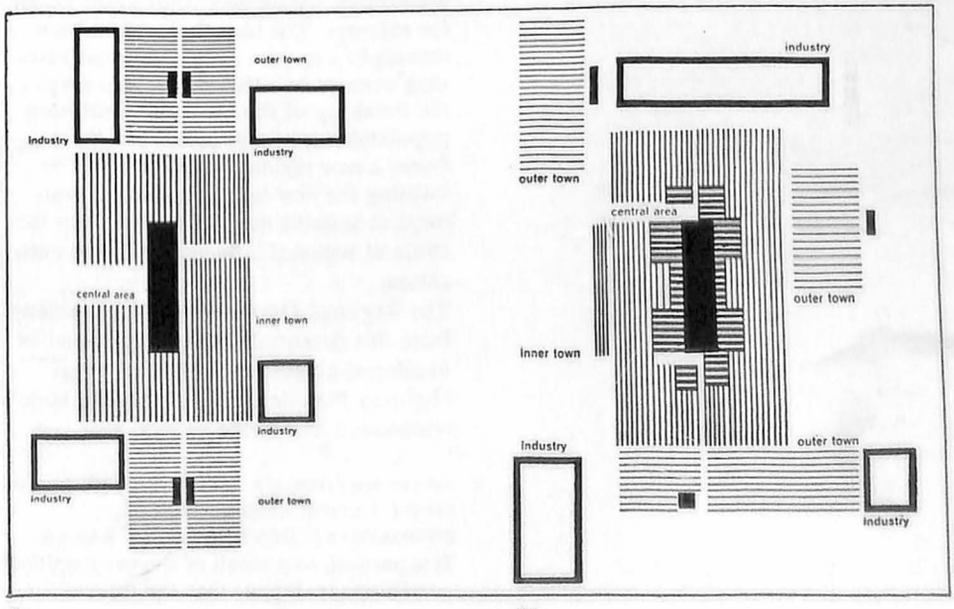

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The heart of the whole town is the central area three-quarters of a mile long and averaging a quarter of a mile wide. The central area is designed on the principle of complete segregation of vehicular and pedestrian traffic. The pedestrian decks are generously designed and form a continuous shopping parade embracing all types of shops. Car parking has been designed to accommodate over 8,000 parked cars below the main pedestrian deck and the pedestrian system passes over the central roads system and leads directly into the inner shopping core.
The primary schools and their play areas are sited inside the residential areas and although the secondary schools and their play areas are also sited inside the residential areas, their playing fields are mostly in the belt of town open space outside the residential areas. Small local industrial estates and industrial areas are sited within the residential areas but adjoining the collector urban motorways. In order to disperse industry three major industrial areas have been provided and all have good access to the London - Exeter Motorway.

LANDSCAPE

The multi-professional team that produced the plan included a landscape architect on the staff of the London County Council; and a private consultant also shared in the work from the time when the site had been selected until the project was abandoned (before the final design, as published, had been prepared).
The published report reveals the great consideration given to landscape in the preparation of the design, but nothing of the particular contribution of the two landscape architects who had a share in it. It is, as would have been the town itself if built, the collaborative fusion of many people's thinking and imagination brought to bear on totality and detail alike; and even those who took part in its making would find it hard to disentangle

PROF. MITSUO YOKOYAMA

New towns development in Japan

any particular individual's share. When the report came to be written it was found impossible to include a heading entitled 'Landscape'; for the good reason that from the very start, landscape had been an integral concept helping to shape the whole character of the town, its uses, location and form.

This thinking appears in various chapters, particularly those concerned with the master plan, residential areas, recreation, open spaces and roads. It ranges from the main aims of the town: "Urban character in terms of buildings and landscape should be achieved. The town should stand out distinctly from the surrounding countryside and yet be complementary to it"; and its basic shape: "A compact linear town, only a mile in width and having its major openspace peripheral to it, creates its own green belt and achieves a contrast between the hard built-up urban landscape and the softer landscape of lakes, playing fields and woods which surrounds it"; to the details of pedestrian ways, toddlers play spaces and gardens.

Anyone who reads the report and studies the plan should realise that, though the project started realistically and with full study of the site, its outcome is theoretical. The plan, as one of the leaders of the project remarked later, 'has a spurious air of finality'. It has a certain rigid and repetitive diagrammatic quality because its main purpose is to demonstrate the theoretical concepts. There is no doubt that had the town come to be built, topography would have asserted itself; and within the main structure of the plan consideration for landscape would have modified the details, helping to give local character and separate identity to the particular parts.

Mitsuo Yokoyama, Landscape architect and Town Planner.
Graduated from the University of Tokyo, Faculty of Agriculture. After some practical experience in town planning, became Professor of Town Planning at the University of Chiba, and later a similar position at the University of Tokyo. Is at present: Professor of Landscape Architecture, University of Tokyo, Faculty of Agriculture, Department of Agrobiology; Vice-President, Japanese Institute of Landscape Architects; Japanese Delegate to IFLA; on Standing Committee on Education of IFLA; on Executive Committee of the City Planning Institute of Japan. Has travelled in Europe and U.S.A. in research and has written 'Regional Planning', 1960. Was Chief Editor of 'Landscape Architecture in Japan', 1964 — the brochure published at the Tokyo 9th IFLA Congress.

1 THE NEW NATIONAL DEVELOPMENT PLAN AND NEW TOWNS POLICY

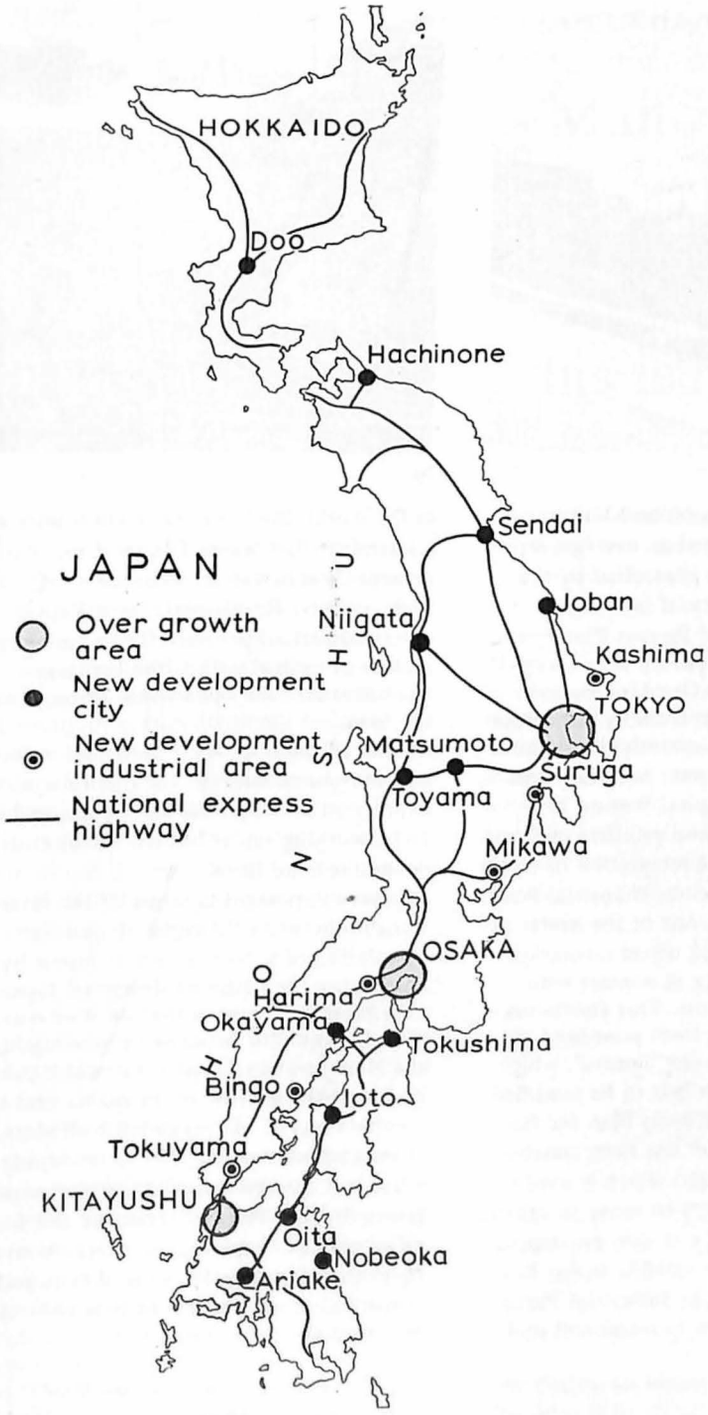
It was due to the National Economic Plan of 1960 and the inception of National Planning, that real regional planning in Japan was initiated, and launched in the right direction as a national policy. The phases of this policy are, according to the government: the accumulation of social capital to improve the imbalance between private and public capital; the reduction of the complexity of the industrial structure, which is based on technological innovation and high productivity; and the promoting of the labour movement corresponding to the modernization of agriculture and the reduction of differences between incomes. This should lead to the reduction of differences between regions, i.e. the improvement of the dual structure of society.

The conception of National Planning, drawn up as a result of these policies, is based on the development of littoral heavy and chemical industry areas, and inland 'precision machinery industry' areas. This, of course, is the 'concrete' appearance of the decentralization policy for industry. The ideas have often been repeated — as part of the National Planning conception. This policy also helps the break up of the highly concentrated population areas and industries. So it forms a new regional centre system, by locating the new industries with investment in suitable areas, and builds up the circle of regional influence by decentralization.

The Regional Development Plans, arising from this decentralization policy must be developed abreast of the new Express Highway Planning, as a part of the communication and traffic system.

2 DESIGNATION OF THE NEW DEVELOPMENT CITIES AND SPECIAL INDUSTRIAL DEVELOPMENT AREAS

It is natural, as a result of the geographical conditions in Japan, that the littoral



heavy and chemical industry areas hold the key places in the regional development centre system.

Last year, there were 13 New Development Cities and 6 Special Industrial Development Areas designated under the new law.

These are almost all situated in places suitable for the littoral heavy and chemical industries, excepting one new development city, located inland.

This trend may be influenced by the present world situation as well as by the physical geographic conditions in Japan.

As these new expanded town construction plans represent the first step in promoting the national comprehensive development plan, they are intended to be used to push forward the development of cities in each regional area, by making efficient use of potential energy in the existing cities.

The model regional city is expected to have a population of 700,000 to 800,000 after 20 years; by this time these cities will become the regional centres.

In Japan, it is said that regional centre development plans aim at the construction of cities with a population of one million. This is supported by the fact that, judging from the level of national income, we can expect to raise the cultural level in the region when the regional centre has about a million population.

Two particular examples can be given of a master plan of New Development Cities and Special Industrial Development Areas.

One of these is the regional plan centering in Okayama City and Kurashiki City.

This area has been reclaimed to form the littoral industrial area, and in some parts of the area the factories have already begun to work.

More attention must however be paid to the relationship between the littoral industrial area and its hinterland development area, especially with regard to air pollution and other public nuisances. It is, therefore, natural that there must be

*Woven bamboo mats approx. 2m × 1m, the modular dimensions of which determine room sizes.

88

A corner of Tokyo including traditional, neo-classic and early 'jazz-modern' architecture, electrical transmission tangles and sky-signs; — the whole crossed by multi-level expressways which wholly disregard the existing town pattern.

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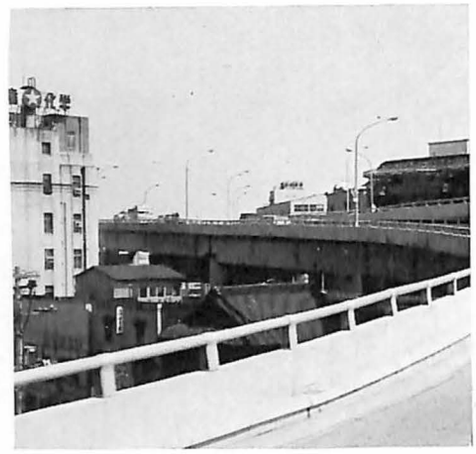
Constructions in timber and bamboo, so picturesque in villages, become sordid pockets of decay as towns grow into cities.



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reserved or acquired a separating green belt between these areas. Nevertheless, it is very difficult in Japan to secure land to reserve a sufficiently large green belt in such areas, due to the backwardness of land use-planning. Another problem in the regional development can be found in the phenomenon of 'Sprawl'.

Another example is a master plan of Tomakomai New Development City in Hokkaido. The industrial area includes chemical plants and in this site also there arose the problems of air pollution and sprawl. The solution for this situation was a suitable location for residential areas related to the direction of the prevailing wind, and roadside open space areas on both sides of the principal road. Fortunately, there were wide areas of nationally owned land in this region, and the plan proposed was feasible.

To realize the plan of these new Towns, the Government makes it a rule to set up the programming of the Master Plan for 20 years. Since it requires so much public investment, such plans must be supported by national investment and financing. Moreover, where there has been much preceding investment, it is necessary to raise the effectiveness of investment by rapid implementation. This is a matter of balance between the vision of city planning and the cost of construction. The success of city planning in Japan depends very much upon this relationship.

3 THE METROPOLITAN REGIONAL PLANNING AND ITS SATELLITE TOWNS

Metropolitan Regional Planning in Japan is undoubtedly a very interesting problem in these days, now that Tokyo has become the biggest city in the world.

For the Japanese, it is rather a headache to see the phenomena of extreme concentration of the metropolitan population with a further 300,000 persons every year, and the expanding regional area with 20 million people. As mentioned above, the National Capital Region and Kinki Region were designated as over-grown areas, which must be controlled by the decentralization policy of industry.

The National Capital Region Plan has been designed in the period since 1955, with reference to the Greater London Plan. There are however many difficulties in controlling the mammoth city because of the following reasons: Arbitrary concentration of the Capital Region as a result of the centralized political and economic system; the integration of minor enterprises in the Keihin Industrial Area which has long been one of the hearts of industry in Japan and where advantage can be taken of being in contact with world communications. This enormous expansion, resulting from poor land use planning has lead to the 'Sprawl', which has caused the green belt to be modified. Under the Satellite Towns Plan for the Capital Region, there has been constructed new industrial land which is used to induce inland industry to move to existing small cities. Recently, a new movement towards dispersal to satellite towns has arisen in such ideas as Industrial Parks, and plans for a New Government and University City.

Under any circumstances decentralization policy is a difficult matter. It is especially difficult to build an attractive cultural core in such satellite cities. Therefore, the conception of a well designed Conurbation of Satellite Towns has now been proposed for the National Capital Region.

4 THE NEW RESIDENTIAL TOWNS AND THEIR TOWNSCAPE

As mentioned above, the large scale residential towns have been constructed in order to break through the 'Sprawl' of the over-expanded high population areas in large cities.

Recently, Japan has experienced an example of a large new residential town rising to a population of 300,000 people, which is, I think, probably the biggest one in the world. Such a phenomenon may be a characteristic cause of large scale urbanization in Japan. Regardless of scale, in New Residential Town Planning, a very important problem for us landscape architects to deal with is the landscape treatment and the open space system of the town.

Studies of them both are now under way, and may be considered the main form of expression for Japanese landscape architects, working under limited social and economic conditions.

It is very important to consider the relationship between the capacity and the population of a New Town in Japan by comparing the planning design of Japanese New Towns with that of Western New Towns. For instance in housing in the New Towns of Japan, there still can be found the narrow room spaces and the compact way of life regulated by Tatami*. It goes without saying that townscaping in cities will change according to the population density. Here in Japan we can find an actual case that a house rent is influenced by population density, ground rent and construction cost, which in turn restricts the condition of townscaping.

5 A CASE STUDY ON A REGIONAL CULTURAL CENTRE

Lastly, as a case study of Regional Urbanization, there is a pilot plan for a Cultural Centre in Shizuoka Prefecture. (Fig. 33 and 34).

There is a Regional Cultural Centre and Sports Ground designed to lie in the middle area between Shizuoka City and Shimizu City. This Regional Centre is planned to be the core of a Regional Circle of Influence including Numazu City and Hamamatsu City. To carry out this plan, the Tomei National Express Highway which is now under construction, will play an important role. The comprehensive sports centre and Cultural Centre connected by the boulevard have an area of about 40 ha (100 acres) and are

surrounded by the green area, in which there are located a music hall, a theatre, an open-air theatre, a fine arts museum, a library, a museum of local cultures and industries, and other public buildings. Cultural facilities in Japan are apt to be gathered in large cities. However, the planning of a New Regional Cultural Centre as well as a New Development Industrial City is highly estimated from a viewpoint of National Planning.
The design work of this project was carried out by the collaboration of architect H. Saito, and landscape architect K. Ikehara and S. Ueno.

6 CONCLUSION

It can be said that National Planning in Japan, in an age of rapid urbanization, has only just begun to be carried forward. The greatest development of new towns belongs to the future.
In problems of new town construction and new development planning in relation to urban renewal, with National Planning for a background, Western practice has given us the benefit of many of their own valuable experiences. Moreover, the researches on the theoretical study of town planning, such as 'Charte d'Athènes' and 'Delos Declaration', are in progress now. How should we play our role as landscape architects in planning new towns? In Japan it has been seen that the planning of new towns is only successful by the collaboration in team work, of town planners, civil engineers, architects and landscape architects.

Jeremy Dodd, architect, planner, and landscape architect; educated Derbyshire and trained in architecture at London University; first visited Japan while in Royal Air Force. Worked in team of Sir Hugh Casson; studied landscape architecture at Durham, and lectured on subject and on urban planning at Illinois and Yale Universities. Member of R.I.B.A., I.L.A., and A.S.L.A.; in 1962 returned to Japan to open private architectural-city-landscape-design practice; working at present on city planning studies for Tokyo and Tokushima.

Man on his feet

Man, having fought long and hard for his political rights is in grave danger of losing the right to move freely about the city which he created. Without the city, there can be no fruitful discussion, no real self-government, no communal life to stimulate the individual ideas and ideals beyond the existing achievements.
The comfortable suburb, is only a kind of self-hypnosis. All is neat, trim and strictly individual. There are trees, flowers and winding roads without sight of slums, industry, the extremely rich or untidy poor. The houses, at 1, 2 or 4 to the acre with a touch of conservative looking tradition here and there, cost much the same in any given 'sub-division' and the owners also are not too dissimilar for comfort. However, it ill-serves any country to cover up the productive landscape and the potential recreation landscape, with a low density sprawl, as has been pointed out many times before — all, unfortunately, without much effect.
Turning one's back on the problems of to-day's city by abandoning it for the suburb, will eventually leave only the very poor and the well-heeled rich in the larger cities, *unless* steps are taken to restore some of the benefits it offered before the violent machines of the industrial age were let loose. The landscape architect, who has a duty to care not only for the plant materials in the landscape, but also for the people, (that they may enjoy its beauty in peace and safety), must play a vital part in the restoration of the city and the countryside.
If one accepts that the city really *is* worth saving, and that the establishment of popularly agreed planning concepts does not mean giving up any political freedoms, the next question is 'what form should the re-created city take?' No answer is possible without long term philosophical goals, concerning man's rights in the general urban environment. Additional rights will stem from the potential of the climate, resources of the landscape and character

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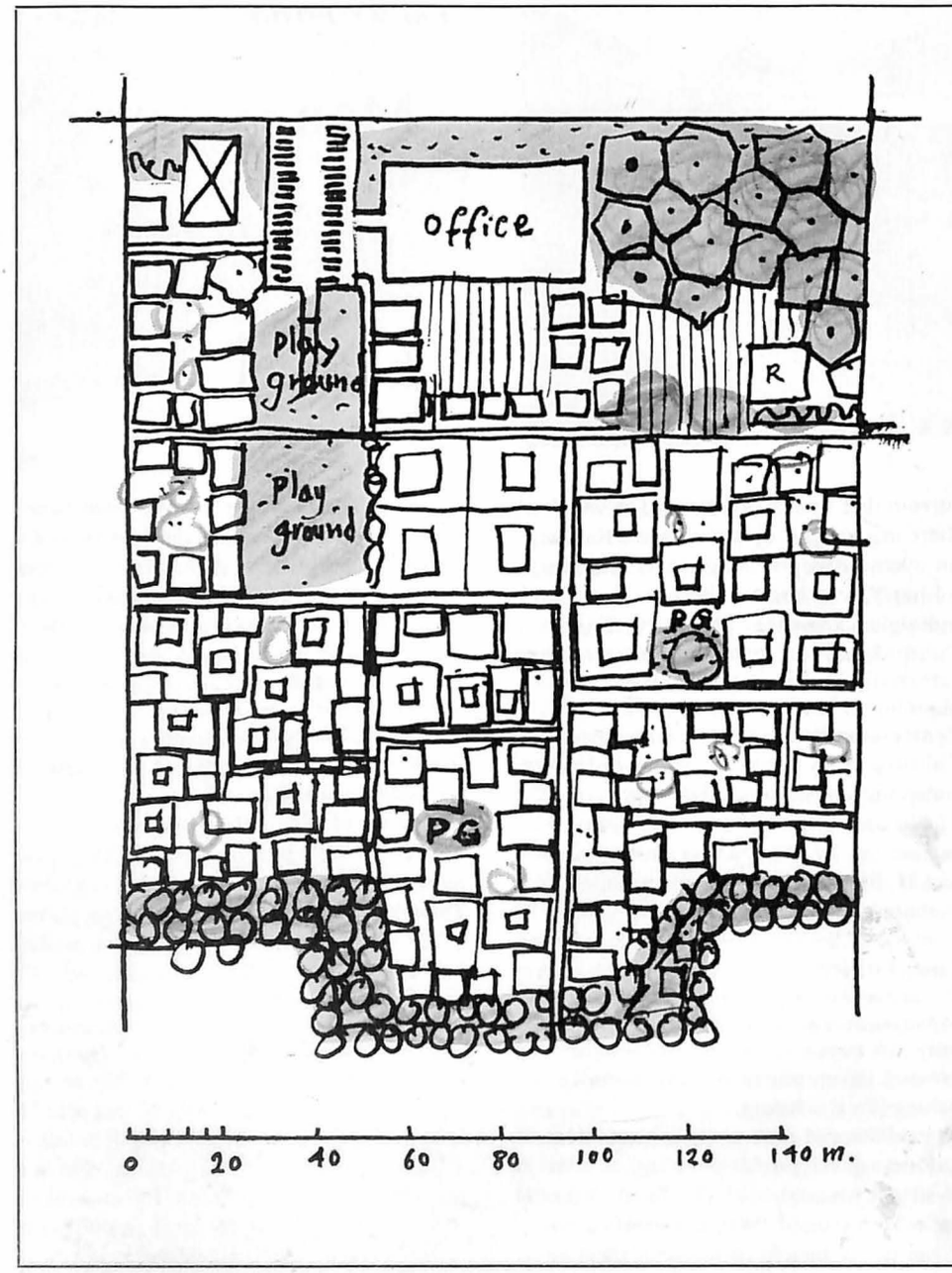
Detailed layout: a mixture of old and new dwellings within a protective green belt



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of the particular peoples. A United Nations *Urban Charter* is badly needed!

We are concerned with the spatial continuum of the city. The architecture may be good or bad, but probably from this point of view its underlying unity, or lack of it is a more important consideration. The trees and actual ground forms of the urban landscape must be bold in scale and consistent in intention, to have a unifying effect on the architecture, which, without dictatorial control is naturally likely to reflect the discordant views of present day owners.

We are deeply concerned with living *space* as architects of the urban landscape, and, with the rapidly growing population of the world, the probable food shortages, not to mention the shortage of recreation space. Thus space is likely to become ever more valuable as aesthetic as well as physical asset, with more and more competition for it. In the countries that are developing into industrial nations and those which may be called the strong new industrial nations, like Japan, there is a rapid increase in the urban population due to the widespread demand for labour, the magnetic drawing power of the bright city lights and the technological revolution on the land. In Tokyo for example, this increase amounts to more than 25,000 people a month, mostly in their teens or early twenties, which puts this city into a constant state of outward growth, and inward flux.

The natural growth of a city is organic. The new construction grows at the point of need, or demand, and the service facilities are sometime later adapted to cope with the new situation. While this involves a certain constant upheaval, which is dusty and untidy, it is much better than forming a new city in the wilderness, when the old city, with its 'life' and innumerable personal associations in business, public affairs and private life only needs updating here and there. The mechanical equipment, including

91
Vehicle level: movement and parking
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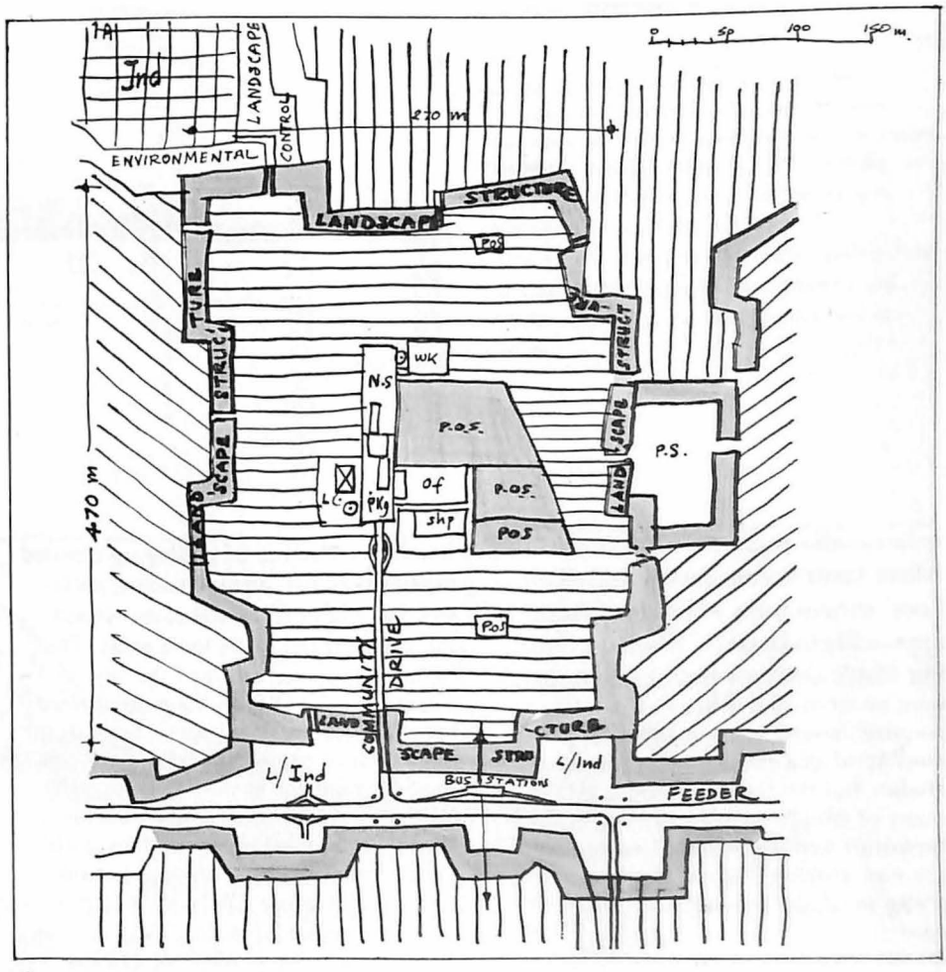
Human level: ground form . . . people, plants, earth.
Urban landscape: shelters and spaces human-scale only (Combination of old and new housing within narrow green 'Skyline' tree belt).



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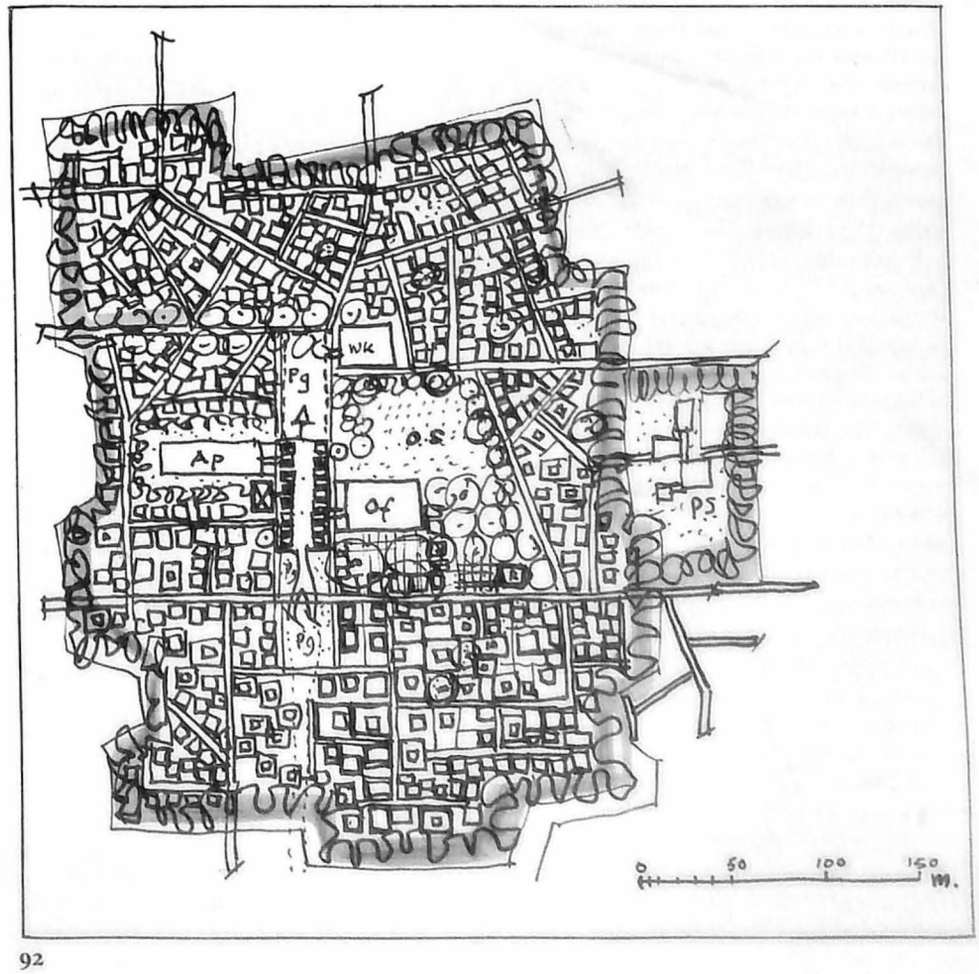

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cars and trucks, must have proper *insulated* routes, not mixed up with the natural life of any citizen. The services, such as water supply, must be made easily accessible; for example they could pass through buildings. I believe a policy of 'gradualism' is consistent with the organic character of city growth and of the proper application of *man's urban rights.*

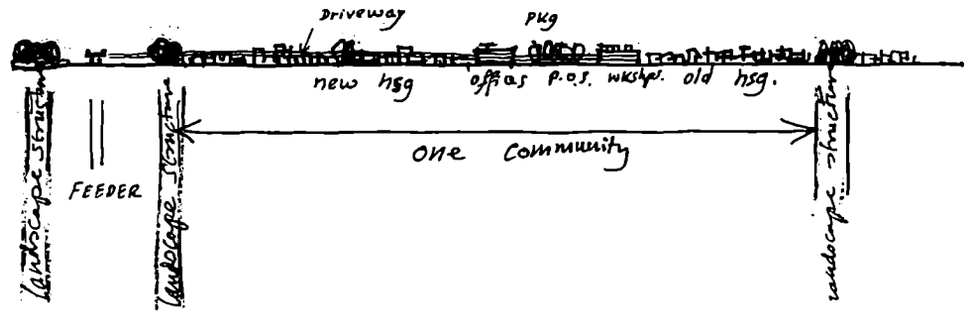
The basic rights of man must include those of the urban dweller, who created the city, but who failed to secure his environmental rights when the city grew rapidly with the technological revolutions of the steam, internal combustion and electrical (atomic) ages.

This chapter attempts to list only the more important environmental rights; the reader will think of many others, without difficulty.

THE SEVEN CITY RIGHTS

1 The right to the '*floor*' of the city. Public space is at present given over to the dominant motor vehicle — the order must be reversed, to restore the safety of the common man.
2 The right of sufficient open *space*, in the right place — enough for all the varied activities of Man.
3 The right to an ordered, *comprehensible form* in the city, so that a hierarchy of units is developed out of the inherent local landscape, and existing communities.
4 The right to enjoy some *part of nature*, in all the open spaces of the city.
5 Right of *freedom from noises* greater than 70 db.
6 Right of *clean air* to breathe.
7 Right of clean *water* to drink, to swim in, and of course the right to have foul water removed.

On the following pages are set out the problems in further detail, and some proposed solutions to some of them. There will be many other possible solutions, but in trying to consider the city as a whole, and to allow for its future development, and probable renewal along



unforeseeable paths, the range of possibilities becomes considerably narrowed. Local environments will cause different approaches to be taken, which is as well, but Man's needs are remarkably similar, once he elects to live in a city in any country. Several cities in Japan have been considered as a starting point for these studies, but the results are applicable to many of the old, haphazard cities of the temperate and semi-tropical world, that are now growing fast and desperately trying to adapt themselves to the present day.

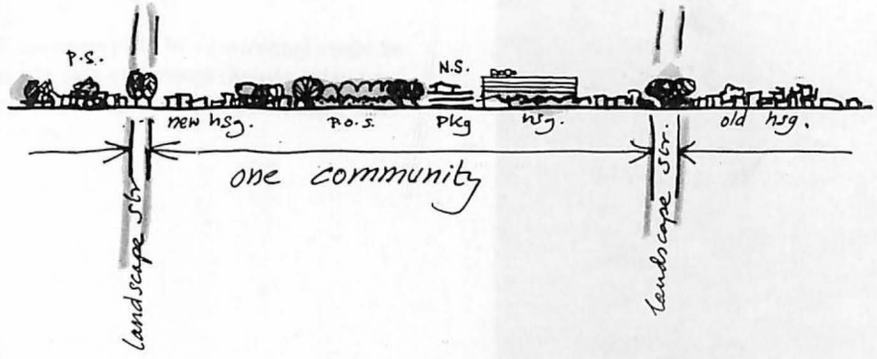
1 THE RIGHT TO THE FLOOR OF THE CITY

The city, created to facilitate exchange of goods and security, continues to offer the former, but in place of the latter, only offers a more dangerous existence than in the countryside. Some cities are more devoted to offering the vehicle driver everything, at the expense of the pedestrian, than others. Los Angeles with over half its surface devoted to the motorist's needs make Tokyo, with only ten per cent of the ground area occupied by roads, appear old fashioned, but this is, in reality, the exact opposite of the truth! In Tokyo, except for the few broad streets, the land is used for on-the-spot living, not for moving about on. This is, I think, the correct approach to the form of the city. Now, with the huge increase in the number of cars (over a million vehicles), new steps are being taken, such as the building of six new subway lines and the construction of largely elevated expressways, to provide adequate but not excessive capacity for movement of goods and people above and below the *living plane*, the ground plane. The motor vehicle, the railway, monorail, pneumatic tube, conveyor belt, elevator, all need their specialised channels. Thus Tokyo, faced with the alternative of either making wide roads at ground level to provide a percentage of the city for road surface like London or Paris or of putting up elevated expressways, has, due to financial necessity, because of high land costs, chosen the latter for the down-town areas. The basically medieval fabric of the city, with its suitability for life on the ground plane may be preserved, if this trend towards the separation of people and vehicles is continued throughout the city. The casualty toll on Tokyo's roads is only a couple of dead every day, which shows how quick the drivers are in their reflexes, but the total of injured per day is much higher — over one hundred and fifty. With the continuous rise in the population and the increase in the number of vehicles taking place relatively, even more rapidly, this situation is bound to deteriorate still further until the separation is complete. The narrow winding streets of Asian cities, with their blind corners, sharp bends and irregular widths often developed out of the boundaries between the rice fields of adjoining farms. The 'wide' lanes are barely twelve feet wide, allowing two carts to pass; most are about one cart-width; while innumerable passageways are barely wide enough for a man on horseback. To-day, the children who use them as playgrounds, are constantly leaping out of the way of cars and small trucks. Pedestrians seek safety behind the stout concrete utility poles or flatten themselves against the walls. Goods for sale, or being unloaded, refuse and construction work, frequently block the wider lanes. In fact, as there are about ten people for every vehicle, but practically no room for them all on the streets, the existing 'tram-way' streets are filled to overflowing most of the time. They are the only streets on which a speed of around thirty miles an hour (40 kmph) can be achieved. Furthermore they effectively divide into two, the communities through which they pass.

Remove the vehicles from the medieval cores of each district, and one has an ideal city fabric! The tram-streets become strip parks, nursery and primary school sites, and the elevated express-ways loops, sub-loops and feeders which are proposed in the author's 'Plan for Tokyo, 1975' (Fig. 94) carry the traffic to parking facilities. Before describing this in detail, there are two other existing trends that should be discussed.

Firstly the 'precinct' type of planning, in which traffic flows on a widened road network, leaving many smaller areas free of traffic. This is being applied, gradually as a result of necessity, by the limitation of truck traffic to major streets throughout Tokyo, and the widening of existing ground level roads. Although some bridges for pedestrians are being provided, they are almost an admission that a barrier to normal life is being formed — there can never be enough bridges to surmount the psychological barrier. Accidents will continue unless *cars* are eliminated from the precincts, and then the access to important buildings may be difficult.

The other trend is to say 'Tokyo is too big, bad and un-plannable, let's abandon it, and begin again somewhere else, like Tokyo Bay where the water is shallow, or the slopes of Mt. Fuji, — a beautiful site. Then we will return to improve Tokyo with massive sector-by-sector total renewal'. The idea being that land prices will fall and incentives can be used to divert the incoming population to adjoining little Tokyos. But the chance of a major cut-back in the growth of the Tokyo-Yokohama megalopolis, where some 15% of Japan's population lives, is very small. At least until the thirteen new industrial centres are formed out of rather dormant coastal cities in other parts of the country, and this will take ten or fifteen years before their influence is really felt, and then it will be limited to the manufacturing sector of the economy. In Japan, every company of any size has to maintain a head office in the capital and this is not likely to change overnight.



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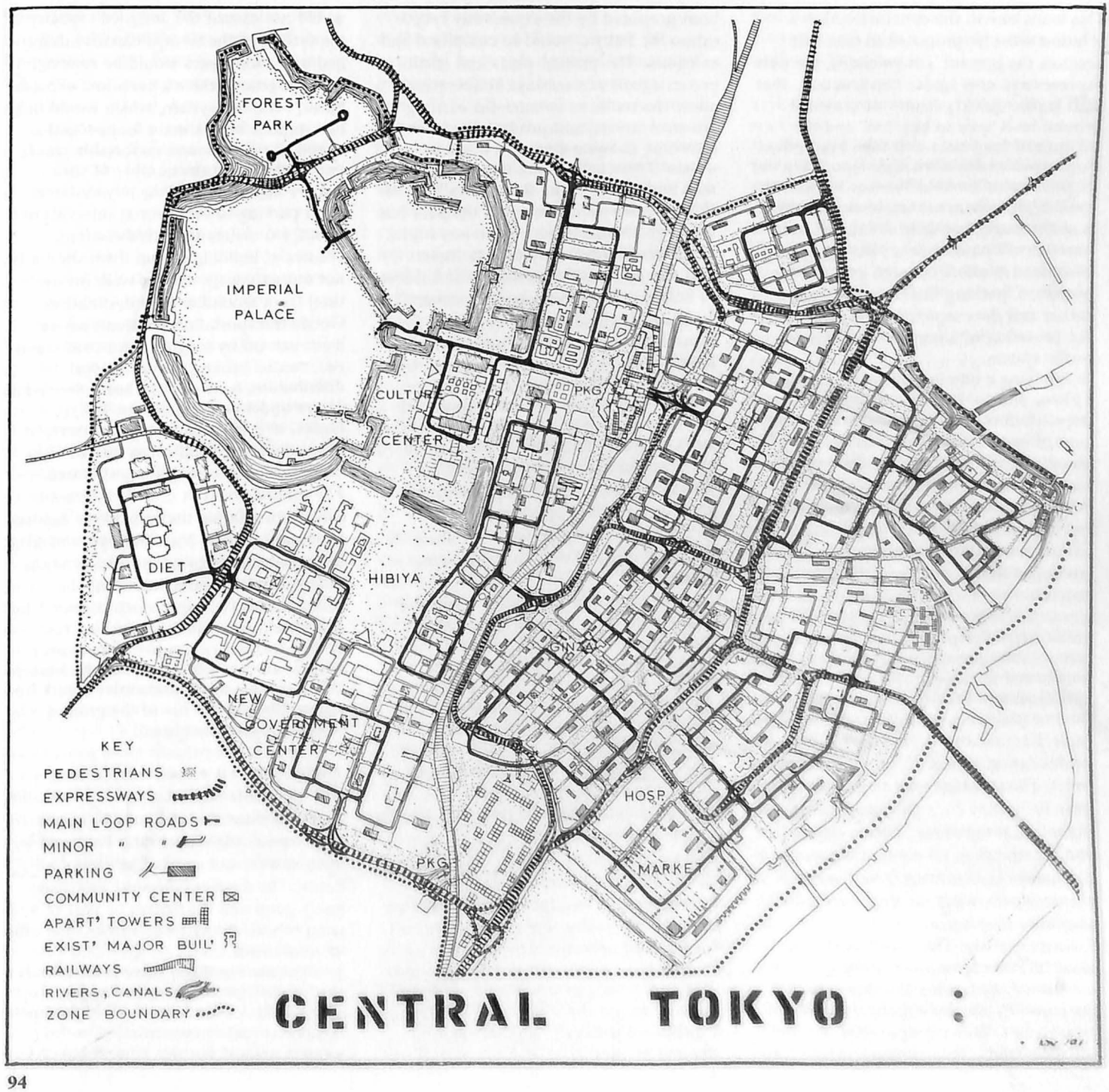
Plan showing two level Tokyo. The existing expressways — planned, under construction and completed — are extended by loops and sub-loops to serve parking buildings that form cores for clusters of commercial buildings etc.
The ground plane is restored to pedestrians and shade trees, parks, playgrounds and 'walks'. A visible landscape structure is formed.



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This leads one to the conclusion that a solution must be proposed to take into account the present Tokyo chaos, the new expressways now under construction, that shift traffic quickly from one crowded ground level area to another, and the mixture of land uses and high land prices. Some owners are often unable to make use of their valuable land because of need to build high, others are unable to purchase it as the market price is so inflated, thus renewal will have to be a piece by piece co-operative effort between groups of owners, a parking facility public corporation and the corporation responsible for the provision of a completely elevated traffic system.

In applying a city-landscape form plan to Tokyo, and to Tokushima (a 200,000 population regional city that will be the core of one of the new industrial cities already mentioned), one is also considering the other cities in crowded Asia and Africa, that are now largely pedestrian, but that already have the beginnings of a useless road widening programme. It is envisaged that the cities be allowed to redevelop naturally in relation to an elevated traffic system, and rights of light and air etc. The present average density of around sixty persons per gross acre should be allowed to double before further sprawl should be permitted over the productive plains on which these cities are built. Easy, outward growth must be prohibited in favour of internal rearrangement. The eventual total population can only be limited by a national population limitation programme. This is clearly becoming urgent in all parts of the world; it can hardly be dismissed from the minds of city designers, whatever their professional allegiance may be.

Returning to the 'Plan for Tokyo, 1975': some further explanation of the drawing is required. Following the principle that the ground plane belongs to the man on his own feet, the existing system of radial and circumferential expressways that have been proposed by the expressway corporation for Tokyo, would be completed and extended. The present plans and small percentage of expressways in operation, allow the traffic to re-enter the existing crowded streets, and produce less overcrowding in some areas but more in others. There is only one way to separate man and vehicles, and that is *totally*. With this total separation in mind, the plan has developed with a series of one-way loops, sub-loops and two-way private feeders that will link the expressways with clusters of buildings around the parking-tower facilities. Traffic from the 60 kmph expressways enters three-lane 40 kmph loops serving a community bounded by the natural land forms or tree lined expressways. Two-lane sub-loops branch out from each side, with two one-way lanes, and a 20 kmph limit. From these elevated roads constructed at public expense by the corporation, feeders co-operatively, or privately owned, link parking towers which would be financed and controlled by another public corporation.

Private ownership and public ownership are combined to ensure a good urban 'main structure' and a viable, realistic economic base. The major producers of traffic would be nearest to the parking building, while others would have walk-way-bridge access, and/or be linked by conveyor, pipeline, moving sidewalk etc., etc. Electric trollies would link ground floor distribution centres under the parking facility and existing small shops restaurants and businesses.

The system, within the city, would be a closed one, only accessible through the toll stations at the edge of the city and at the parking facility towers, and their toll booths. Just as in the air-space over a city the number of aircraft is limited and carefully controlled, so would the number of vehicles on the elevated traffic system, so that the vehicles in transit through the city and those with a destination in it would not exceed the designed capacity of the system or the storage capacity designed to match. Space would be reserved for emergency vehicles, taxis and express buses. (The bus system, which would link bus-stations on the main loops together, would provide cheap comfortable travel and tend to limit the number of car owners making use of the city system). With parking tower cores at intervals of about 300 metres in both directions, clusters of buildings about them should be not more than 150 metres walk (or cycle ride) from any other final destination. Goods transportation terminals where loads carried by long distance trucks and rail, can be broken down for local distribution, have already been planned or are under construction in Tokyo, Osaka, and Nagoya. Living quarters, offices, parking facilities as well as warehousing etc. are all incorporated.

The natural trend in crowded agrarian cities with a fabric that was never exposed to Renaissance or Victorian types of 'city improvement', is to adopt a laissez-faire policy, since the ruling class has the vehicles and is not too much bothered by industrialization. In Japan, where the middle income groups are already on wheels, and the others crowd into buses, it is clear that a comprehensive attack on the problem of the use of the ground plane is urgently required.

2 THE RIGHT TO ENJOY ADEQUATE GREEN OPEN SPACE

Not only must there be enough open green space, there must also be paved open spaces, and sports facilities of all kinds. The distribution must be reasonably good and the system be part of a comprehensive city form, rather than only an adornment.

In most metropolises, there is an overall shortage of green space. In Tokyo, there is less in fact, than half a square yard per head! It is mainly concentrated in the western area of the city, since the parks

95
No space for people or landscape in overcrowded Tokyo.
96
Expressways to be constructed could be made part of a comprehensive plan to restore the ground plane to people and plants.

96

were once well sited feudal estates, that became public on the restoration of the Emperor in 1871. Since that time, as in USA, the various pressures exerted on government officials have caused numerous buildings of a 'cultural character' to be built within their grounds. Even hotels. Until after the late Pacific war, there was no provision for public gatherings — essential in a spontaneous democracy. Now, public parks are used for this purpose too, which is a good use for them, but means that the open space resources are even more inadequate in size.
Rivers, canals, lakes and the sea are all visual open space, and when they are clean can be used for recreation. In Tokyo, the canals are being turned into highways and are dirty beyond belief; but their potential is revealed at night, when even the dirtiest of canals reflects the lights and neon signs thereby creating a night landscape of great beauty.
In the 'Plan for Tokyo, 1975', the elevated traffic system is allowed to pass through strip parks of varying width, reducing its noise and forming a visible definition to the communities (see 3). Parks at the centres of each community will provide for people with a couple of hours to spare, while small rest parks will be dotted about at frequent intervals to cater for workers taking a short break. Children's playgrounds will be found everywhere, in many cases using the street system no longer needed for electric trollies or for vehicles. Roof tops will provide the private space or office-garden. The whole system would be accessible on foot or by cycle so allowing safe and carefree access to young and old alike.

3 RIGHT TO HAVE AN ORDERED COMPREHENSIBLE FORM TO THE CITY
The formlessness of modern industrialized cities, compared to the small cities of medieval or Renaissance days, gives rise to our bewilderment when we visit them, and to the lack of interest in their future or even present government on the part of the citizens who live in them. This naturally leads to a decline in the *community-qualities* of the city's physical form. This in turn, makes the inhabitants unwilling to protest against the misuse of the property held on their behalf by the city authorities because the place where they live is a minute part of the whole big, endless sprawl; — bigger than they can ever know, beyond mental grasp. They have no sense of being responsible for the problems that stand in front of them. Administrative boundaries, not being based on the visible landscape forms, increase the meaninglessness of the big city even further.
In personal studies made of Tokyo and Tokushima re-formation, it has become clear that the form of the city, should be based on a visual hierarchy of forms, *and* where possible the main elements of this should primarily be natural land or water forms, and secondarily, artificial land forms and forest tree belts. Minor boundaries would be suggested with understorey trees and even shrubs from the natural climax forests of the region.
Forest tree planting belts would insulate the noise from the elevated system, some twentyfive feet above the ground plane, and on one side or the other from time to time there would be wider parks. In other places there would be forest tree belts through which no highways pass, according to the overall 'green-structure' plan.
The 'green structure plan' would be the most important permanent (yet, living and changing) structure of the city. The elevated traffic system, only the second. Within these two, around the permanent parking cores, and in the lower housing and small local-business shopping areas, there would be a continual flux of new landscape, i.e. new architecture and new planting. The mutilated street tree would be abolished. In order to *retain* a coherent form the majority of buildings outside the parking cluster would be limited to forest tree-height or less — the skyline must not comprise less than 2 or 3 trees from any ordinary living room.

4 THE RIGHT TO BE IN CONTACT WITH NATURE
By the right of contact with nature is meant the ability to see the landscape, much as was possible from the medieval city, as well as to enjoy some home garden, window box, roof garden or equivalent. The construction of a permanent 'green structure', and a comprehensive park system growing out of it, as well as the clean-up demanded for air and water, and the city environment generally, should ensure this right.

5 THE RIGHT TO QUIETNESS
Today, there is scarcely any part of the city down-town areas where one can find quietness amongst the buildings or on the streets. We have come to accept this, but as the plan proposed here shows, this need not be so. Vehicle design, and highway design could direct sound upwards from the elevated highways, and reduce it at the source. Factories and office machines can be designed for quietness. Certain noisy processes should be carried out in underground automated plants or outside the city altogether. The industrial zone, would, under this plan, vanish, except for heavy industries and others that could not be 'tamed'. Factories would be sited to reduce travel by workers — who need more space than the goods they produce.
Airports, a major source of trouble, ought to be sited on islands or at any rate have their own insulating landscape form. That this is necessary is shown by Dulles international airport, Washington D.C. where two wide tree belts are not adequate to prevent sounds in excess of 100 db (liable to damage hearing) from penetrating more than a mile beyond the boundary. Artificial hills are required to tame the noise of the supersonic jet-liners of to-

morrow. The connection to the city centre can best be formed by mono-rail, as in Tokyo, where the journey to a down-town railway station will take only fifteen minutes.

6 THE RIGHT TO CLEAN AIR
In parts of Tokyo-Yokohama, such as Kawasaki, there is a pall of smoke hanging over the city most of the time. The soot and dust falls on everything living, causing blight and stunted growth. To people perhaps, it is cancer-inducing vehicle fumes that are the most harmful, even though largely invisible. In the residential areas the smog fallout is 13 tons per square km.; in commercial areas 25 tons/sq.km; and in industrial areas 45 tons/sq.km. In December 1962, there was a smog in Tokyo that lasted for five days and was equal to any in the London of the old pre-smokeless-zone days. The high cost of filtering equipment makes it difficult to enforce regulations even when these exist. Thus, in the clusters of buildings around the parking cores of this 'Tokyo 1975 Plan' there are common flues for the control of waste products from all factories and small flatted workshops.
The news that all vehicles produced by certain manufacturers in the USA can, after a certain date, be equipped in the factory, with a $ 8 unit to consume the deadly hydro-carbon wastes before they even enter the exhausts, will encourage other makers, I hope, to follow suit, and legislators to demand that they do so. This will eliminate one of the most anti-community qualities of the motor vehicle, and will make its use in tunnels or elevated ways more tolerable.

7 THE RIGHT TO CLEAN WATER
Not only has the government of Tokyo failed to provide adequate supplies of clean water, but it has allowed the canals and rivers to become open sewers. The beaches in adjoining prefectures are soiled by oil, and in Tokyo itself the swimming pools are either public and inadequate, or private and, of course, extremely expensive. The rainfall in the city is twice as high as in Los Angeles, and the consumption per head is only half as much. Proper landscape-engineering in the surrounding mountains is only just beginning. The city must be properly serviced with fresh water for all purposes as a matter of course. The visual aspect of clean riverways and canals is also important. The removal of refuse and all waste must also be efficiently carried out as part of a positive city-landscape design, and in this connection the litter habits of the people as well as their understanding of their basic city-environmental rights need to be made a matter for public education.

Landscape and roads

CLERMONT H. LEE

Landscape integration in road design

Clermont H. Lee, landscape architect in private practice in Port of Savannah, Georgia, U.S.A.; studied at Smith College, Northampton Mass, and holds Bachelor and Master degrees; member of A.S.L.A.; — has particularly studied the Southeastern Region of the U.S.A., and its parkways; Vice President S. E. Chapter of A.S.L.A.; official Chapter delegate to 9 th I.F.L.A. Congress; on examining board for registration of landscape architects in State of Georgia.

In nineteen thirty-three, the National Park Service in the Department of the Interior, entered headlong into a new and hitherto unexplored field of park development: National Parkways. Funds were provided for the development of a national parkway to connect the Shenandoah and the Great Smoky Mountains National Parks, located almost 500 miles apart in the states of Virginia and North Carolina. The Blue Ridge Parkway, now nearing completion, is that pioneer parkway project, and over a period of thirty years has served as a proving ground for many concepts and principles now firmly established and being followed on later national parkways.

A national parkway, as defined by the Park Service, is a federally owned, elongated park featuring a road designed for pleasure travel, and embracing scenic, recreational or historic features of national significance. Access from adjoining properties is limited and commercial traffic is not permitted. A national parkway must have sufficient merit and character to make it a major attraction and not merely a means of travel from one region to another. The parkway differs radically from the typical un-zoned high-speed highway which seems to invite powerlines, billboards, taverns, and a ribbon type of development which tends to destroy itself.

In the United States, the demand for outdoor recreation is vast and is expected to increase sharply. Americans' favorite outdoor sport is driving for pleasure. A forecast for the year 2000 shows an enormous expansion for this form of recreation. It has been recommended that our highway net-work be designed for recreation as well as for other uses.

The fiftieth anniversary year of the National Park Service, 1966, is the target for completion of development and staffing of about 190 parks, parkways and other units of the System. Ten national parkway projects totaling over 1,138 miles are in various stages of completion. Over 800 miles have been completed or are underway under the Federal-Aid Highway Act. These roads vary in length from 22 to 477 miles.

The general policy is that the states through which the parkway passes acquire and deed to the United States the lands necessary for the parkway road including interchanges with highways, parallel service roads, and protective buffer areas, plus adjoining parks where recreational developments as well as necessary public service and maintenance facilities are provided. These parkway features may be accommodated within a varying width averaging 1000 feet or 125 acres per mile (305 meters or 50.5 hectares per mile). Preservation of the parklike zone is insured by fee-simple ownership supplemented in places by purchase of scenic easements on strips of adjoining lands. This type of easement restricts undesirable uses of adjacent properties and permits farming activities. Over a period of many years, the ratio of cost, with the State acquiring the land and the Federal Government building the road and other facilities is 10 percent State and 90 percent Federal. Average cost per mile of the Blue Ridge Parkway is estimated at $ 189,000.

From the very beginning, the National Park Service has been fortunate in being able to utilize the engineering services of the Bureau of Public Roads of the United States Department of Commerce by means of an agreement which covers not only the national parkways but all major road projects in the National Park System. The Bureau has assigned many of its engineers to the special requirements of park and parkway work. The landscape architects and architects of the Park Service, and engineers of the Bureau of Roads work together as a team in all phases of the reconnaissance, location, design and construction of the parkway road. Following completion of construction con-

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Blue Ridge Parkway.
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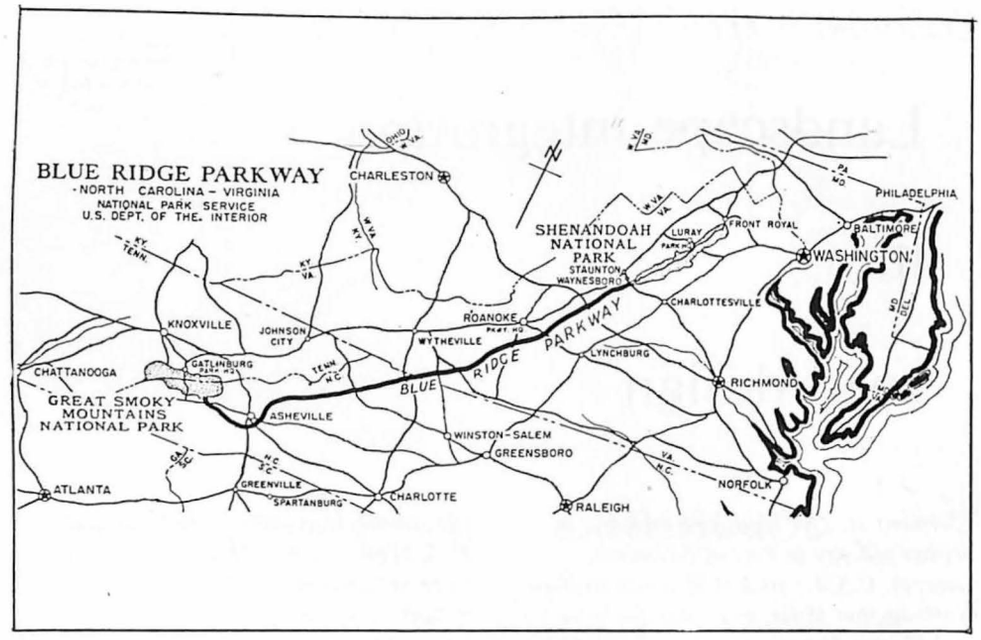
Blue Ridge Parkway through rolling highlands of Doughton Park, North Carolina.
99
Parking Overlook, Blue Ridge Parkway.



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tracts, the various units are taken over for maintenance by the Park Service. Contract units of 10—12 miles require 2 or 3 years to complete. As in national parks, the administration of each parkway is under the direction of a superintendent with a staff sufficient to handle protection, maintenance, and interpretation.

Location and design are based on maps, stereoscopic aerial photographs and ground reconnaissance. Working closely with the engineer, the landscape architect studies the area and aims for a location having points of scenic, historic or archeological interest. Local farm practices, forest culture, and wildlife refuges also add to the visual or inspirational pleasure of the visitor.

If possible, the location includes a variety of scenic as well as educational features interwoven with parks of several hundred or several thousand acres where campgrounds, picnic areas, trails, lakes, and fishing streams may be found. The road may cross national forests through an agreement with the United States Department of Agriculture. The whole parkway is considered as an elongated park to accommodate moving rather than static visitors. This ride-awhile, stop-awhile characteristic governs (I) the location of the park widenings for recreational facilities, at intervals of 30—60 miles along the way, (II) the provision of necessary overnight, food service and maintenance units, (III) the design of the road with frequent turnouts and parking overlooks as well as vistas to be observed while in motion, and exhibits of nature, pioneer life and current land uses.

These elements, shown on right-of-way maps, are conceived and planned before the right-of-way is obtained. A combined set of drawings and narrative sections, known as a Master Plan, controls all parkway development. It defines the importance of the parkway, the areas to be developed and those to be undisturbed, as well as the methods of interpreting the

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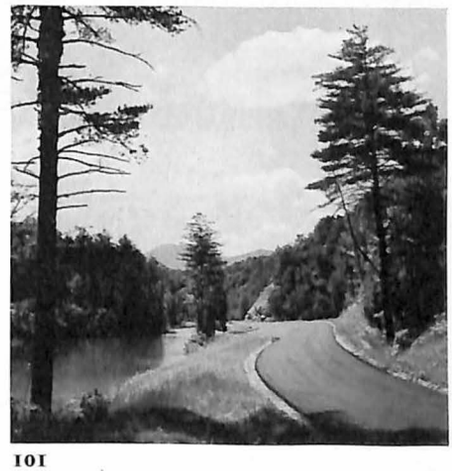

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important features. Maintenance Plans show vistas to be kept open, lands used for pasture or crops, limits of mowing, et cetera.

In designing the main parkway road, the safety of the parkway motorist is a first consideration. Good sight distance consistent with the terrain is important. Standard provisions are guardrail, lane marking, standard traffic signs, markers, and milepost, and underpasses and overpasses (which are called grade separation structures) at railroads and crossroads. Entrance roads are spaced far apart and parallel local roads are planned to eliminate frequent entrances and exits. Since the parkway is primarily a recreational facility, the road design is based on moderate rather than high speeds. A top speed of limit of 45 miles per hour is used on the two-laned Blue Ridge Parkway, for example, with curves of lower safe speed suitably marked. Comparatively low speed and freedom from trucks and large buses make it possible for the parkway traveller to forget the tensions of highway or turnpike driving and really enjoy his parkway experience. Design standards permit some observance of the scenic beauty of the countryside while en route. The frequent overlooks provide opportunities for more leisurely panoramic viewing. Signs, map folders and informational leaflets are designed to make the parkway largely selfguiding, thereby reducing the need for human guides. Mileposts relate the traveller to his destination and to outstanding points described in the parkway folder. I should like to mention some of the distinguishing characteristics and principles of parkway planning, using the Blue Ridge Parkway as an example. The Blue Ridge mountain chain parallels the eastern coast many miles from the shore. Highest peaks reach over 6000 feet. The slopes range from gentle to steep and rest on some of the oldest bedrock formations in the nation. The moist, cool climate encourages lush vegetation which varies from coastal plain plants at the lower elevations to spruce and fir atop the highest peaks. The silence, pure air, and vast forests bring to mind a continent in prehistoric days.

In setting the hight-of-way boundaries, the landscape architect strives to create an illusion, if possible, that the horizon is the only visible boundary. This is accomplished in several ways:

1 In mountainous or hilly country by setting the fee-simple boundary or the scenic easement line just over the nearest ridge to ensure permanent scenic protection.

2 In wooded country by including sufficient width to allow 'seeing into' the forest floor.

3 In farming areas by bringing the crop up to the road on parkway lands leased back to the adjoining owner. These colorful scenes of fruits, vegetables or grains, varying from season to season, furnish strong ground patterns and relieve the monotony of forests with no cost to the government for maintenance. Here and there, open meadows whose boundaries are predetermined are leased for hay production and haystacks are carefully located as part of the roadside picture. Pasturelands, similarly located in the early right-of-way determinations, enhance the rural scene. Fences are kept close to the road and the parkway boundaries are invisible since the fee-simple line may lie along a nearby stream and the scenic easement line may be along the far side of the field.

The main parkway road is located to take full advantage of the famed Blue Ridge scenery and is fitted closely to the ground. In rugged topography the result is graceful curvilinear alignment with an occasional long tangent. To sustain interest on this long parkway, variety is provided by alternating stretches of open valley with ridge top or escarpment location. Vistas must not only be planned but maintained both at overlooks and along the road and are generally designed to be seen while in motion. They include canopy vistas and

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Blue Ridge Parkway along the Ridgetop North of Roanoke, Virginia.

101
Blue Ridge Parkway along Otter Creek, Virginia.

102
Peaks of Otter picnic area along Little Stony Creek. Note the fireplace in the foreground fits into the Rocks. Blue Ridge Parkway, Virginia.

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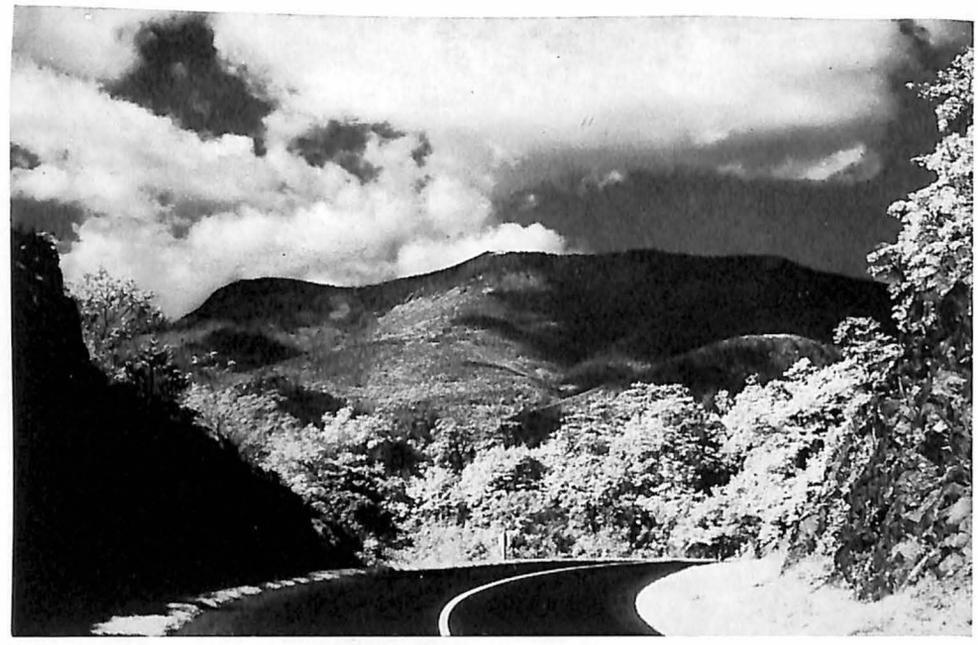
In Western North Carolina, the Blue Ridge Parkway — most visited National Park facility — swings around the shoulder of Mount Mitchell, highest peak in Eastern America (elevation 6,684 feet). Near Milepost 250 on the Blue Ridge Parkway, where this picture of Mount Mitchell was taken, a paved highway (N.C. 128) connects the Parkway with the summit of Mitchell, where there is a state park open free to visitors. The Parkway reaches an altitude of more than 5,000 feet in the vicinity of Mount Mitchell.



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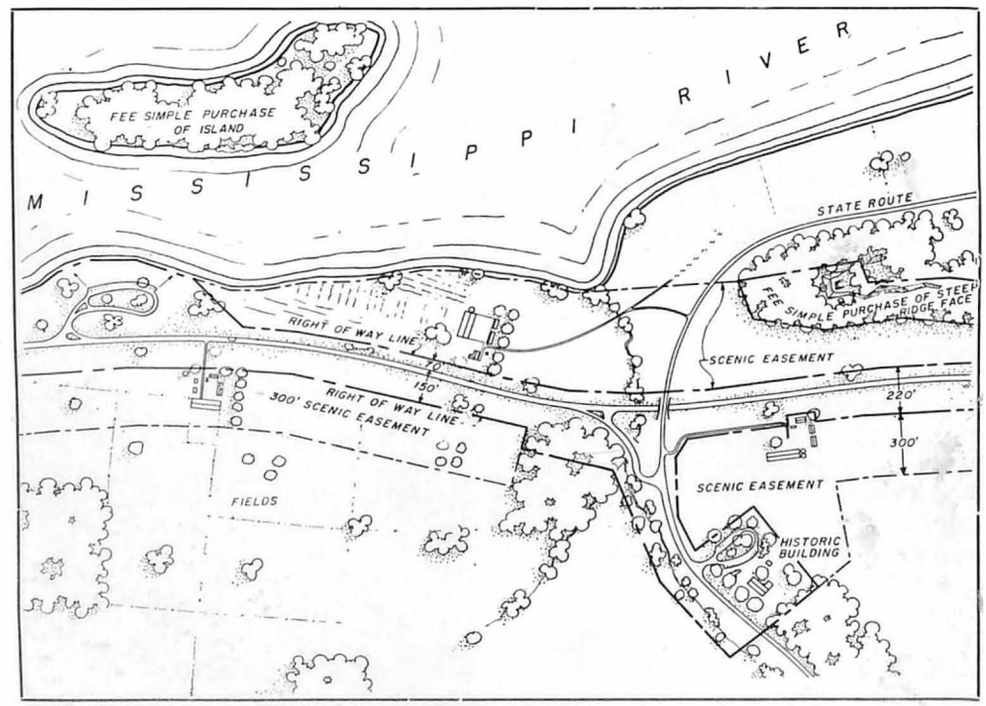
open, long-range views of mountain and valley scenery. At the overlooks, appropriate signs mark prominent features for more leisurely viewing.

As part of the right-of-way acquisition the landscape architect studies the problem of adjusting local roads to the new parkway location and together with the engineer selects locations for highway or agricultural grade separation structures, many with stone-faced arches. Power and telephone line relocations and service roads are planned. All of these are shown on the land acquisition plans for use by the individual States.

Slopes along roadsides are laid back and rounded to a natural degree, reducing the 'man-made' look and eliminating many erosion problems. Seeding with grass or groundcovers as the grading progresses results in quicker healing of scars at lower cost than if the seeding is done as the final part of the grading contract. Along cuts and fills, new planting of broadleaf evergreens, and Pinus and Cornus plus other native materials will result in additional growth and increase which later produces a mature appearance.

Specimen trees and unusual rock formations are protected during construction for later display. Rock cuts or slopes offer opportunities for imaginative treatment. Here again variation is sought from a monotonous constant slope — in some cases by removing loose dirt and rock carefully, as a dentist might, to expose the formation — in other cases by providing planting pickets for colorful vines or preserving free standing rocks having interesting shapes. Tunnels are often more economical than through cuts and can be used to avoid visual damage to mountaintops and other scenic areas. Overlooks and turnouts are balconies from which to observe nature's 'Spectaculars' and are convenient starting points for short hikes or nature trails.

Water features are not common. Soil borrow pits may be utilized as ponds.



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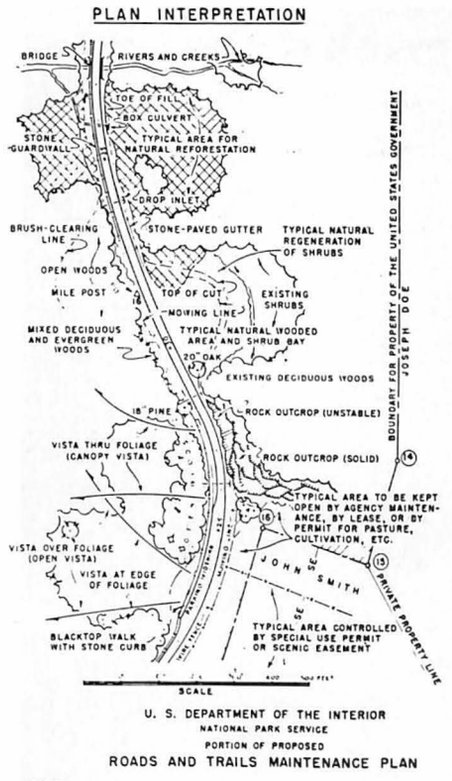
Small lakes can cover up channel changes and are popular for fishing. Wherever old mill ponds are found, they are restored and displayed. At Mabry Mill, the pond, restored mill, mill race, and wheelwright shop form the nucleus of a popular exhibit of mountain industry of the past. Cornmeal and buckwheat flour, ground by water power, are sold here and in hotcake form in a nearby restaurant. Original pioneer homes and cabins are preserved and exhibited along the parkway. They give the visitor an accurate and colorful picture of early mountain farm life. Rail fences are not only decorative; they serve as reminders of the early days in their varied forms, and they sometimes bring the grazing cattle and sheep right up to the road's edge. With entire fields under national ownership or scenic easement, living pictures of rural mountain life are permanently preserved. The nineteen park enlargements along the Blue Ridge Parkway vary between several hundred and several thousand acres. They provide for campgrounds, trail systems, and other public facilities requiring more space than the right-of-way affords. Here are located picnic areas, visitor centers, lodge accommodations — when they are not available nearby — coffee shops, gasoline and comfort stations and shelters. The buildings, designed to harmonize with the simple pioneer mountain structures, have stone chimneys, board and batten or weatherboarded walls, and shake roofs. Management units in the parks provide working space for the maintenance personnel and rangers. As you can imagine, a 477 mile parkway road, plus 19 parks and more than 100 overlooks means a big road maintenance operation alone. The parkway superintendent with headquarters in Roanoke, Virginia has short-wave radio communication to all points along the parkway. The value of this means of communication is apparent when slides, fires, or accidents occur and require immediate action. Park and parkway roads are



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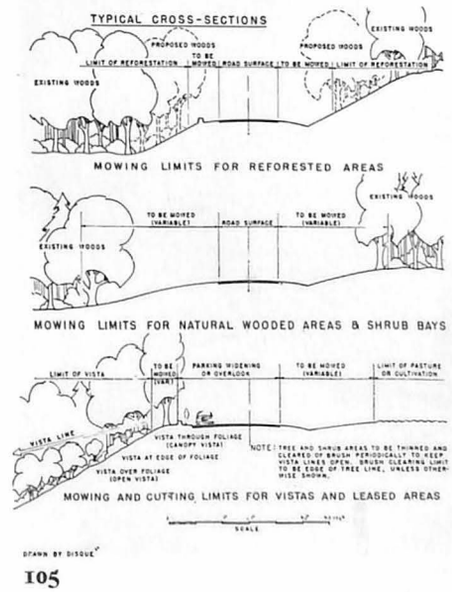

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Parkway land controls in rural areas. Hypothetical drawing to illustrate variability of parkway land takings so as to provide:

1. **A development width of 220 feet with space for widening of pavement if necessary in the future**
2. **Control over the sightliness of rural scenery by means of easements, so that lands could continue in present ownership and remain in use as farms**
3. **Outright purchase of occasional historic sites, wooded islands, swamps, bluff faces, and marginal lands**

open to traffic all year, but sections are sometimes closed during periods of heavy snow or ice.

The entire philosophy of a national parkway such as this is to give each traveller the opportunity to see, feel, and enjoy the mountains and the air in a leisurely visit. He sets his own pace and pauses where his interests lie — perhaps to listen to the murmur of a clear mountain stream or the throary roar of a waterfall. He has many glimpses of rural farming scenes mixed in with splashes of fall color or spring bloom. He can stroll along a trail, and if the spirit moves him, climb to a rugged outpost of the ancient Blue Ridge chain. In quieter mood he may gaze over a Persian carpet to far away places or marvel at the endless patterns of leaves against the sky.

Who can estimate the appreciation of nature and love of country that may be awakened by such a succession of ever changing panoramas along the parkway? Driving for pleasure will probably continue to be America's favorite outdoor sport. Our scenic national parkways will increase in popularity and in use, conserved for all time for millions to enjoy in this quiet way through a living section of scenic southern highlands.

106
The steepest part of the tollroad recently built in Fuji-Hakone National Park. A succesful example of road design which does not do harm to the surrounding landscape.

SHINZO NITTA

Landscaping for the first expressway

Shinzo Nitta, landscape architect and landscape engineer. Graduated in Department of Forestry, Faculty of Agriculture, Kyoto University 1945; designed gardens, parks, zoological and botanical gardens, gardens for the blind; became assistant professor of landscape architecture at Kyoto University, and received Ph. D. Agriculture for research on soil quality for playing fields. Specialized in construction of running tracks (including that for the Olympic Stadium, Tokyo.) Became landscape engineer to Highway Public Corporation of Japan in 1962. Now in charge of landscape work on Nagoya — Kobe Expressway. Member of Japanese Institute of Landscape Architects.

in Japan

The first expressway in Japan was inaugurated in September 1964 between Nagoya and Kobe. The 180-km of expressway has four lanes with its total width being 24.4 m, and a designed speed of 80—120 km per hour. As the route was laid mostly at the foot of mountains or out of built-up areas where land values are low, the natural environment had been comparatively well preserved. However the super-human scale of the road construction violated the environment, the recovery of which has been attempted through sowing of grass seed and planting of trees and shrubs. This landscaping has been instrumental in merging the enormous structures into the surrounding environment, as well as in increasing safety and amenity in high-speed driving.

One of the most characteristic aspects of landscaping in this expressway is perhaps the planting of shrubs on the median strip. Because of the narrower right of way in Japan, the median had to be limited to 3 m in width, which is too narrow to protect a driver's eyes from headlight glare, if without any screen. Therefore, shrubs which are 1.7 m high and 1.2 m wide have been planted in a row with an interval of 6 m. Such a row of plants looks continuous in a longitudinal direction concealing the opposite lanes, and in the daytime helps to alleviate the mental fatigue of a driver, even though it somewhat restricts the view from the car. On the curves, the height of shrubs has been cut down to 0.9 m with the interval widened to 10 m, in order to secure a safer sight distance. Near the tunnel entrances where the median strips usually become wider, a naturalistic planting technique is used.

In the median were planted evergreen shrubs such as Juniperus chinensis var. Kaizuka, Chamaecyparis obtusa var. breviramea f. aurea, Ligustrum japonicum, Ligustrum lucidum, Euonymus japonicus, Quercus phillyracoides, and Pittosporum tobira. Flowering shrubs were used on the strip near interchanges, such as Rhododendron macronatum, Camellia Sasanqua, Osmanthus fragrans var. aurantiacus, and Abelia grandiflora.

Cut and filled slopes are all covered with grasses for erosion control and good appearance. Sowing of these grasses was carried out by an efficient blowing method which can cope with the big earth moving machines of today. Seed, fertilizer, dirt, and water were mixed up and blown by compressed air on to the slope making a layer of seed bed, on which an additional layer of asphalt emulsion was sprayed to prevent the seed bed from desiccation and erosion. The seed of drought-resistant 'Weeping Lovegrass' was chiefly used for this method.

Screen planting was used against the feet of overbridges, large retaining walls, and unsightly structures, and to hide adjoining derelict land. Also roadside planting of trees was done to give an accent to the view, and to indicate a change of alignment of the way. Evergreen trees were mainly planted for the roadside, but at places trees with autumn colour, or flowering trees were mingled. Deciduous trees, however, were planted 10 m away from lanes, because their falling leaves cause dangerous wheel-skid.

The Nagoya-Kobe Expressway has fourteen interchanges at an interval of about fifteen kilometers. Wide areas within the loop of interchange are covered with Zoysia grass, Bamboo grass, or clover. Trees have been also planted in groups so as not to be an obstacle to sight distance. Each interchange has different kinds of trees depending on environmental conditions, and thus has an individual character. Shelters, filling stations, squares, and promenades were provided in service areas. There are lawns with trees in parking areas.

Recreational use of this expressway is very popular, for it is quite new to the people and moreover there are a number of areas of beautiful scenery along the road. Although car owners are rapidly increasing in number in Japan, a bus is still the most important vehicle of the people. Under this special situation, periodical bus services will be soon inaugurated on the expressway. Bus stops are provided 3 to 15 kilometers apart from each other, and many flowering trees are planted around the bus platforms.

The numbers of trees and shrubs planted along the Nagoya-Kobe Expressway were around 300,000 in total, half of which came from the nursery operated directly by the Japan Highway Public Corporation. The cost for landscaping was about 2 million yen a kilometer (about 9,000 dollars a mile), which was 0.3% of total unit cost. Twenty landscape architects were employed to do the work.

In the field of construction work in Japan, the collaboration between civil engineers and landscape architects is not yet adequate. The landscape architect's position is not firmly established in the field of the expressway construction. However, more and more people will recognize the value of environment along the expressway. Then the effect of landscaping cannot be denied, nor the role of the landscape architect be neglected in the construction of expressways. Here is surely an opportunity for collaboration; provided that a landscape architect be capable of solving the many difficult problems which are asked by engineers.

Landscape architecture has been until recently primarily concerned with gardens or parks where people sit down or move slowly, and where the object of vision is quiet and comparatively confined. On the expressway, people move at an extremely high speed, and the objects seen change from time to time. Landscape architecture for the expressway should pay much attention to landscape composition which harmoniously corresponds to swiftly moving visions. This technique should be based on motor psychology and be called 'dynamic landscaping', though we have not yet established any feasible method

for designing this. When we see a film taken from inside a running car on the expressway, we feel as if we are driving it ourselves. We might be able to analyse our psychological reactions in this way, and obtain valuable data for the design of balanced combinations of grade and alignment, desirable forms and treatment of cut and filled slopes, and effective layouts of roadside planting and signs. As a result of such a research, we would for the first time be able to design an expressway which is in accord with the function of the car, and at the same time, in tune with the psychology of the driver.

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107
Planting around the gate in Hikone Interchange.
108
View of Taga Service Area.

Landscape and industry

PETER SHEPHEARD

The setting for industry in the landscape

Peter Shepheard, architect, town planner and landscape architect; graduated with 1st. class Honours in Architecture at Liverpool University, and University Graduate Scholar in Civic Design. Worked on Sir Patrick Abercrombie's staff at Ministry of Town and Country Planning on the Greater London Plan, and was later engaged on research and master plan for new town of Stevenage. Works in private practice include Lansbury neighbourhood, and part of South Bank for Festival of Britain 1951; schools, Universities of Lancaster and Keele, and London Zoo. Has written and illustrated colour books on birds, many articles on architecture and landscape, 'Modern Gardens' 1956; — lecturer and broadcaster; Past president Architectural Association; Council member Royal Institute of British Architects; President 1965/66: Institute of Landscape Architects.

The word 'industry' calls up in everyone's mind a bad picture: either of 'dark Satanic Mills', or of the smoky horrors of a steel-making town, or of the clutter and unsightliness of modern industrial slums.
This picture is so universal that even 20th-century town planners fall naturally into treating industrial plants as a necessary evil; in most town plans you will find that all the least attractive sites are zoned for industry as a matter of course.
This is a hangover from the 19th-century, Heavy industry *was* dirty, based on coal and steam, creating smoke, fumes and noise; and much of its labour was doing rough work for small pay and a poor living in adjacent slums. Only in a few cases did manufacturing industry produce beautiful buildings or installations; generally it had a degrading effect on the workers, the city and the landscape; quite unlike agriculture — also a great industry — which has almost always conducted its operations in harmony with the landscape, and often made it more beautiful than before.
The few 19th-century attempts to provide a better setting for human work — Saltaire, Port Sunlight, Essen and some others, took place against the essentially chaotic background of 19th-century industry and made little mark upon it except to direct some men's minds to the possibilities of planning in the future.
But big changes are taking place in this century:
Automation, electronics and nuclear power are making a second industrial revolution; work places are becoming cleaner and more pleasant, workers fewer, and units larger.
Furthermore most governments and cities are beginning to take at least some responsibility for the location and planning of industrial sites, and both manufacturers and trade unions are more anxious to provide better working conditions.
The location of industry is a national problem in every country. Modern industry, owing to new types of power and improved transport is less tied to particular sites than formerly. Nevertheless, there are important linkages which encourage certain industries to collect together, and other more subtle effects of climate, proximity to metropolis, persistance of certain skills, or even of family ties, which cause industry to remain and develop in certain places unless positively encouraged to go elsewhere. One big factor is simple economic inertia — the natural tendency to stay in the place where it happens to be, because of immediate economic advantages, even though long-term prospects would be better elsewhere.
It is clear that major 'land-based' industries — which depend on the winning of raw materials from the earth, inevitably have their locations decided for them. Even in these industries, however, the transport of raw materials has been so improved — by pipe-lines, conveyors, and fast transport that very few industries apart from mining and quarrying are now absolutely tied to a site. Many large industries have grown into agglomerations by a concatenation of small independent effects; for example in Britain the motor car industry has grown up in the West Midlands, originally from skills linked with a large number of other metalworking industries and then from inertia. Now, under government encouragement, it is setting up large plants in other parts of the country with success.
Industrial plants are getting larger, and need fewer workers. American pre-war figures of 75 workers per acre in industry now tend to come down to 10 or even less. This means that the areas of industry are larger in relation to housing and other land uses, which sets a grave problem for countries with little land to spare.
America and Russia can take an entirely different view of industrial location from that which holds good in Britain or Japan. (Nevertheless, land is an exhaustible resource, and no country can afford, in the

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Dereliction and waste itself become awe-inspiring when of great size.

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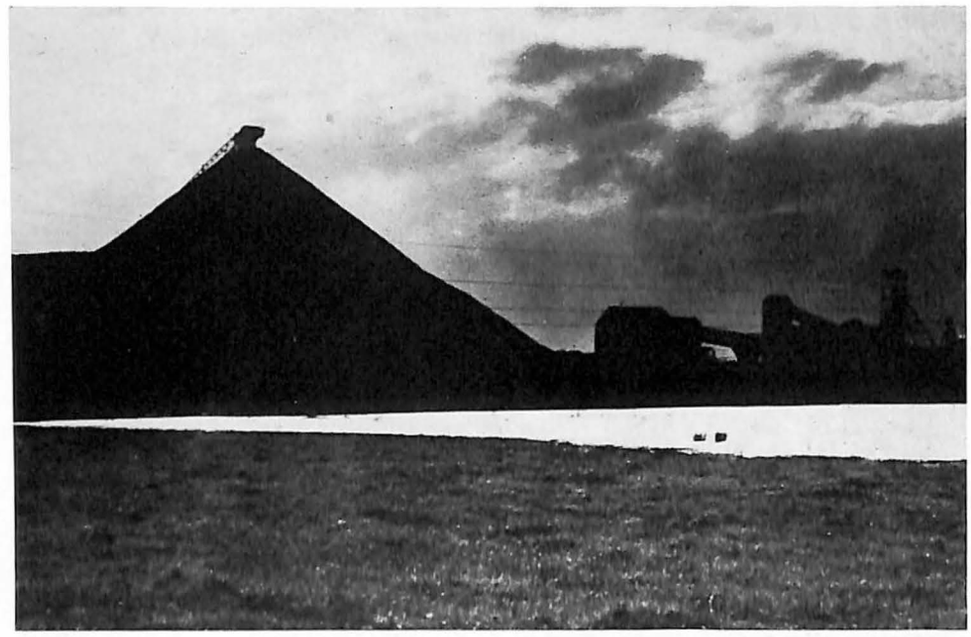
A planing machine cutting clay for brick-making; the size of modern earth-moving machinery brings a new scale to landscape works.



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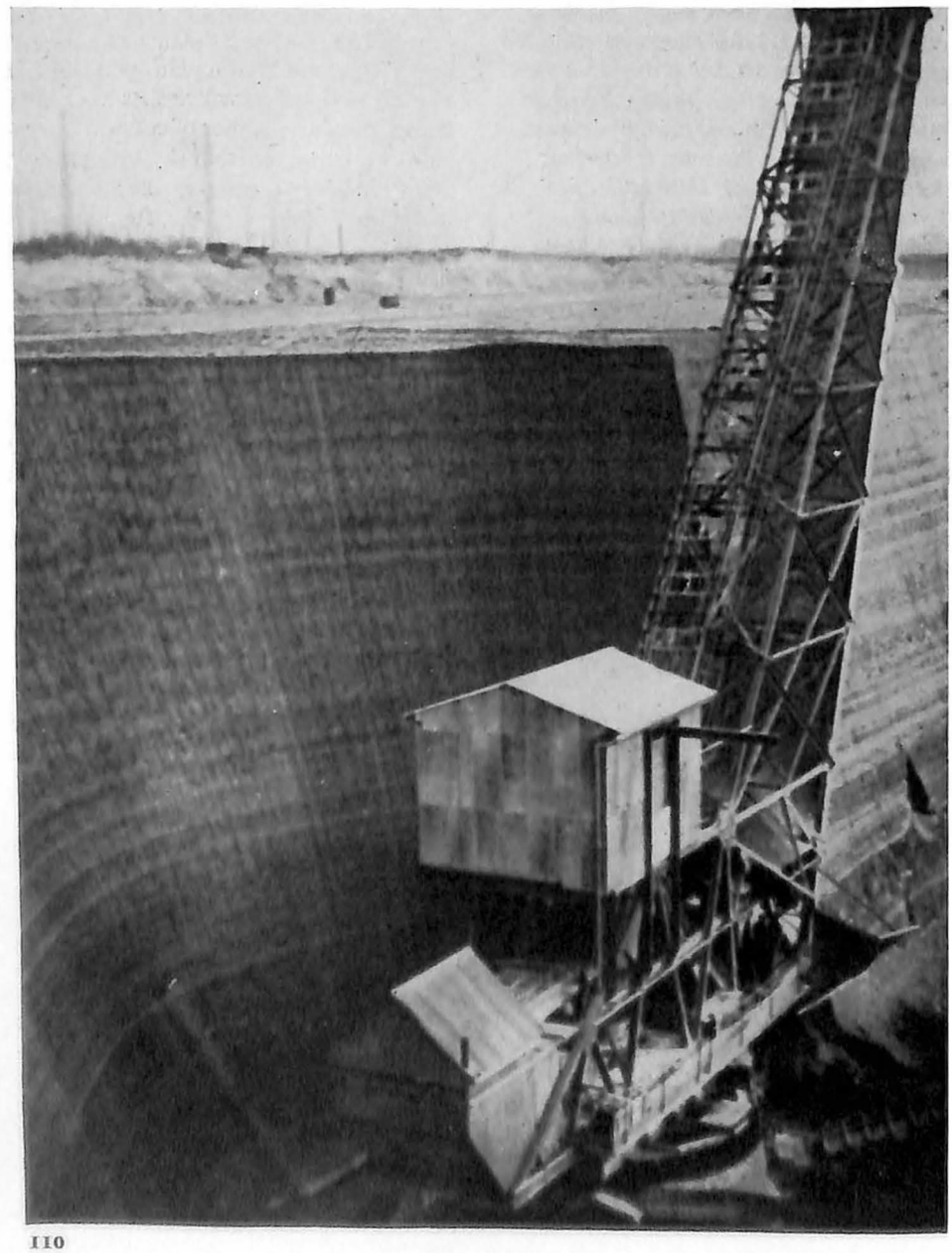

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long run, to waste it.)

From the point of view of the planner and the landscape architect, industrial building is different from other building in several ways:

1 It is always on a large scale, and tends to get larger still. If this is faced squarely, it is in itself a source of beauty; large masses are more powerful and often more beautiful than small ones. The enemy of good industrial building is the clutter of incidental objects — signs, road lighting, pipes, wires, huts, sheds, etc.

2 It always needs room, sometimes vast spaces for expansion. This, in compact layouts (and our smaller countries cannot afford isolated factories) means linear development, and special provision in terraced or multi-storey factories for small industries starting up.

3 It cannot be compressed in space by increasing the density of workers, as housing can.

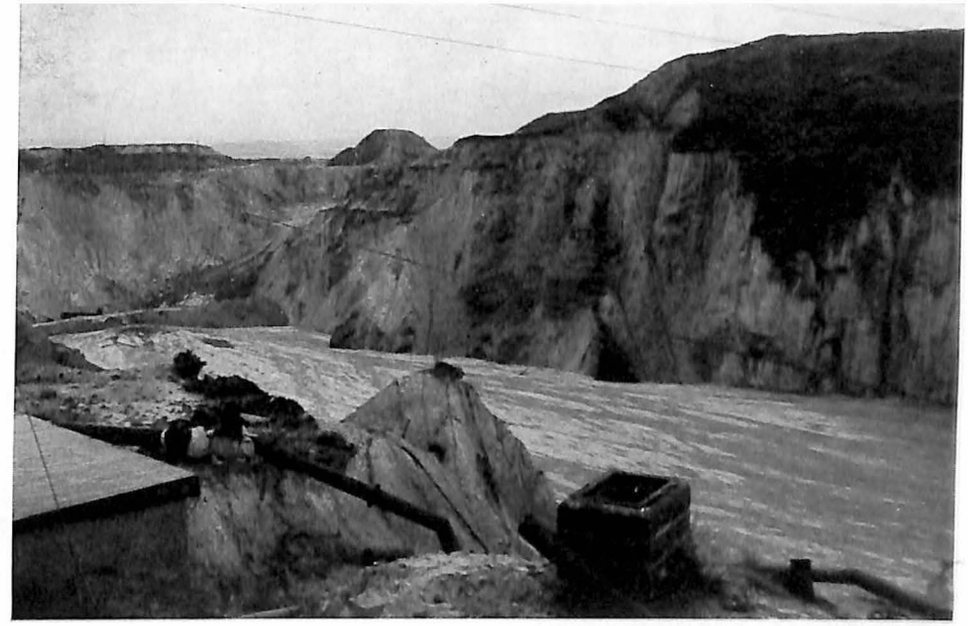
4 The large scale of industrial works and workings often means large-scale disturbance of the terrain and this means that large-scale reconstruction of landscape may be possible, or necessary.

It is possible, then, to state broadly what principles the landscape architect should have in mind when working on industrial projects:

In the first place, an industrial building should only be sited in the countryside when there is an overwhelming necessity or advantage to be gained by the community. Even then, it should, if possible be made an extension of other 'urban' or commercial development, and not allowed to become a further isolated intrusion. Siting should be carefully adjusted to be in sympathy with the land form and to fit into the 'grain' of the countryside. It might, with advantage, be shielded by existing woodland or topographical features.

Large scale buildings — as with large-scale landscape — must be given the respect due to their size, and should not be

111
Dereliction and waste itself become awe-inspiring when of heroic scale.
112
A town in England's 'Black Country'. The characteristic 19th century mixture of industry with housing and other uses, often at a fairly low density and with much waste land.
113
The scale of modern industry demands a new scale in the landscape in which it sits. (Landscape design for Oldbury Nuclear Power Station. Landscape architect: G. A. Jellicoe of Jellicoe and Coleridge).



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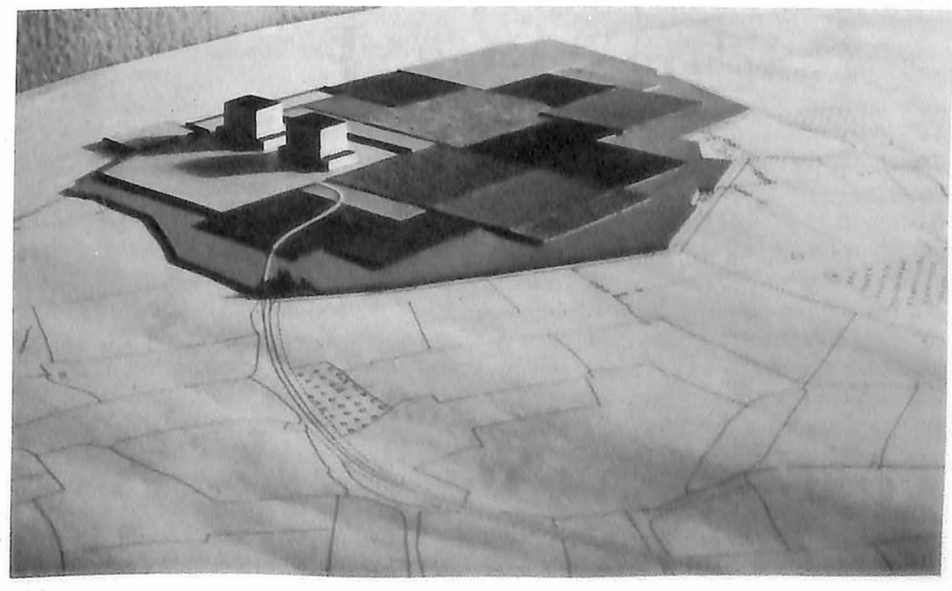

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debased by small-scale gardenesque treatment. If intensive or colourful detail is required, it should be confined to courtyards and other enclosed or sheltered spaces near to the lesser buildings, such as offices or canteens, and not allowed to conflict with the main broad treatment.

No attempt should be made to *conceal* large structures and dramatic engineering installations. Such objects as tall chimneys, cooling towers, electricity pylons, and long dams cannot be hidden or camouflaged. They would only look ridiculous if it were attempted. They can only be assimilated by the landscape if well designed and well sited.

Where the artifact is too large for the landscape, then the scale of the landscape may have to be increased (as in Fig. 113).

Not only the structure itself must be considered, but its total influence upon its surroundings. Its sphere of influence should be limited as far as possible, and the 'working' landscape of agriculture or forestry brought as close up to the building as possible. However, any industrial building spreads out in tentacles of roads, rail tracks, services, lighting, etc. and the effect upon the ecology of the surroundings should be studied. There may be unsuspected results upon wild life, vegetation, drainage patterns or the local water-table.

The designer of the landscape must also be responsible for the design or selection of kerbs, street lighting, signposting, fences and all the other odds and ends which can together wreck the best landscape and he should be consulted about the siting of roads and paths. In England the landscape architect is often not consulted about these things, but they form a major element in the scene nevertheless.

A fence need not always be on the legal boundary — it may be more effective if sited in harmony with the configurations of the ground.

114
Associated Portland Cement Company's works at Westbury Wiltshire. The retention of hedgerow trees helps to integrate the works with the landscape. Landscape architect: Sheila M. Haywood ARIBA FILA.

115
The placing of the oil terminal at Angle, Pembrokeshire, on the edge of the Pembrokeshire National Park, has been done with respect for local amenity. The landscape value of the decaying Popton Fort has been recognised, and many functions of a tanker port camouflaged within its walls.

Small buildings — and particularly those of public utilities — should not be allocated minimal rectangles chopped arbitrarily from the countryside, but should have irregular sites carefully chosen to be part of the field pattern.

In all projects planting may be the medium for linking a building complex to its surroundings. Trees should be used, often in large masses of one species, to complement the buildings. They will often help to conceal small scale unavoidable clutter, and may be a baffle to noise and fumes. Trees will often help to restore the ecological balance; for instance replacing destroyed hedgerows with new copses and spinneys.

Land-shaping may also be used to fit the building into the surrounding topography, and suitable land-forms may also act as baffles to noise, and dust. Grass, when used, should be in large areas and on broadly sculptured land formations.

The large scale of industrial works is often helped by the use of water, which as Sylvia Crowe has said, 'halves the ugliness of ugly buildings in its reflections and doubles the beauty of good ones.' The use of large bodies of water can often be justified as useful for fire fighting and for air conditioning systems.

Water channels are often required, but these need not always be straight and hard-edged. Banks can be economically maintained and stabilized by the properly balanced use of plants.

Even more important than the effect of landscape architecture on industry is the effect of industry on the landscape. This is a vast subject of terrifying importance: the men who guide industry are on the whole far removed in spirit from the countrymen and farmers who made and still keep the humanized landscape. Such men tend to have no understanding of the essential worth and above all of the fragility of the countryside, and – at least in England and America, they regard as of even less value, the small precious areas of wild landscape that remain to us.

It is important to be aware of the pressures upon the landscape, of modern industry, and of some of its effects — often indirect and far reaching. Even in their simplest form these constitute a nuisance from noise, and effluents — from smoke, fumes waster, rubbish, and poisonous or alkaline spoil, but the results can be far more serious.

The industrial demand for water, constantly growing, can deplete streams and rivers, threaten picturesque valleys and lower the water table, and even when returned after use may be affected by heat or chemicals. Rivers, lakes, and even the sea may be polluted by oxygen-exhausting wastes.

Pollution by sewage effluents, similar, but more acute and widespread is made worse by modern detergents which inhibit breakdown of sewage and further reduce the oxygen content of the water.

Emission of smoke, dust, ash, and fumes can cause air pollution at considerable distances, forming smog and contaminating vegetation. Sulpher dioxide, hydrocarbons and fluorine are discharged, and fluorosis in livestock has been measured 50 km to leeward of the source of fumes. The remedy offered is usually only dilution by building chimneys 150 m or more high, which are themselves a dominant and often undesirable feature of the landscape.

Industry demands the transmission of materials and power, so that overhead wires, surface road and rail routes and underground pipes menace the landscape through which they pass. Even the laying of a comparatively small pipe underground may mean a 10 metre wide scar caused by the use of heavy machinery which, even though the surface is replaced, may compact and destroy the soil structure for many years.

Efficient commerce inevitably means unsightly depots and stockpiles of merchandise, chemicals and building materials. Industrial refuse demand large scale disposal methods — dumps and tips or noxious burning. Fuel ash disposal is a problem of great magnitude.

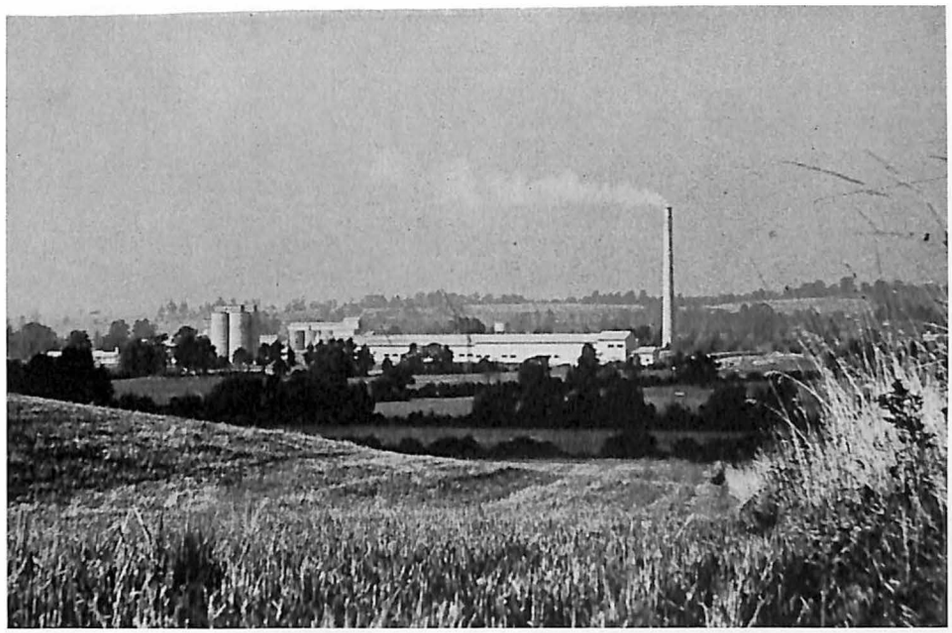
Litter on a large scale is becoming a serious threat to the countryside, largely due to the indestructibility of modern packaging materials. Rubbish dumps, especially poorly controlled dumps of smaller communities, often use pleasant sites such as ravines, old quarries and ponds, resulting in the breeding of rats and the polluting of streams with their effluents. The illegal jettisoning of old motor car bodies and other metal junk in the countryside is becoming, in England, a problem without, as yet, a solution.

Even when precautions are taken to prevent damage, the risk from accident or human error remains. Escapes of oil into rivers or sea, toxic chemicals into the soil, and many sorts of injurious substances into the air are difficult to rectify, and the very remedies themselves, including the use of detergents, emulsifiers, and caustic alkalies may be as damaging to flora and fauna as the leakage. Radio-active effluents are in a special class in this respect.

In our small countries, damage to large tracts of country, especially in wilder places, is done by installations preparing for war. (In its own country this is always called defence!). Not only are these activities largely exempt from any planning control, they are found very difficult to remove when they become obsolete, which they soon do.

Finally, serious, sometimes disastrous, and always underestimated results occur from the contamination of the whole environment by toxic chemicals, in the form of insecticides, herbicides and fertilizers, which have often been used in large quantities in 'industrialized agriculture' before their total ecological effects have been understood.

Apathy about the results of such processes, added to a general disrespect for landscape – at least in western countries – expressed in easy acceptance of squalid



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115a

115a
The bulky and hideous waste of a modern Society is a landscape problem.

advertising, bad planning, and suburban sprawl, constitute a vast threat to some of the most beautiful and fragile landscapes in the world.

European countries have had about 140 years in which to learn lessons from the dereliction attending the Industrial Revolution, and have struggled — sometimes at the last moment — to find remedies and to impose controls. Even now they may be too late to prevent some permanent damage. In other countries, however, where land, water and other resources are, at the moment, plentiful, there seems no need to be careful, and expansion, exploitation, waste, and indiscriminate dumping still continue.

This is dangerous and shortsighted. The world, which once seemed so vast may, before long be found none-too-large for its population. New synthetic materials and toxic chemicals are proving persistent and near-indestructible, and good landscape is not an unlimited resource.

Almost the only professional voice raised in opposition and qualified to combat these threats, is that of the landscape architect. At present he is not being asked to solve these problems by foresight, but only sometimes to palliate their effects by his skill when it is too late. If he is not asked, then he must push himself forward with advice, warnings and propaganda. Conservationists, and preservation societies may attempt to maintain the status quo, but no one will guard the landscape in a *constructive* way, if the landscape architect fails.

Industry and the landscape of Japan

For the biography of the editor see page 30

This chapter is necessarily brief, because, although the impact of industry upon the existing landscape of Japan is already extensive, the influence of landscape design upon industrial expansion is, so far, almost negligible. There can be no doubt that this is partly due to the late start of the Japanese 'industrial revolution', and to the rapid rate of its progress since, which has left little time for aesthetic considerations. Japan is not the only country to have suffered from such expediency — in the 19th century in Britain, no thoughts of visual beauty, attractive environment, or damage to scenery were allowed to check the spread of manufacturing empires. Ugliness was not only tolerated, but justified, and regarded as an inevitable consequence, and even pleasing evidence of manufacturing prosperity.

Up to a point this attitude may persist in Japan today, though there are aspects of the Japanese character which could also be put forward in explanation. Ever since contact was made with Japan after centuries of isolation, Western writers have been trying to explain the series of paradoxes which make up the Japanese attitude to life, and to understand the ability of the race to accept, with apparent ease, two diametrically opposed principles at the same time. It is strange for instance to find that a people with impeccable manners and fastidious decorum in private, can be oblivious to mess and litter in public places. This ability to 'unsee' what does not conform to a desired ideal may strike a Westerner as strange and possibly even insincere; though it may be no more insincere than the Westerner's flexibility in moral values under the pressures of self-interest. Wim Swaan, the South African architect, writing in his book 'Japanese Lantern' puts forward the suggestion that the Japanese code of ethics has been based on traditionally correct behaviour for certain specific circumstances — possibly originating in religious propitiatory rites; consequently there are no *absolute* standards, and the traditional code has no answers for the conditions that exist today.

Whatever reasons may be sought for such paradoxical thinking, the results of it are apparent for all to see: Kyoto temples and gardens are tiny oases in a sea of suburbia; the Yokohama 'wirescape' is one of the worst in the world; and beautiful scenery exists side-by-side with broad expanses of industrialisation.

It would seem that respect for traditional culture, and appetite for industrial expansion are on opposite sides of the same coin, which coexist but are never allowed to come face to face. Anything which suggests material progress is tolerated uncritically. One of the most incomprehensible examples of this is at the Honbo garden of the Daitoku-ji where it is found that between the miniature stone landscape and the 'borrowed scenery' of the distant hills runs a 4-conductor municipal power line, strung between pylons to hang at the exact line of view enjoyed by thousands of worshippers and tourists. The sacriligeous cables appear to be wholly invisible to even the most cultured Japanese visitors.

Possibly the first wave of industrialisation has now passed in Japan, and a somewhat steadier pace of progress may allow the impact of industry upon the landscape to be assessed, and means of amelioration taken into account.

Since the war, Japanese landscape architacts have faced new tasks in bringing green spaces and playgrounds to cities, creating better forms of human environment, and centres of social life; undertaking conservation of scenery, and providing for the growing demands of recreation. To accomplish this, a new art form has to be created out of the traditional Japanese garden. It is a tradition based on the minute-scale introspective courtyard intended for peaceful meditation, and, not unexpectedly, does not easily lend itself to designs for the surroundings of

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116
The Aichi Irrigation Canal (112 Km. long).
Excavations down to a consistent water level have caused severe scars which will take a long time to heal over.

117
Land reclamation scheme in Eastern Kobe. In this work, new land has been formed by the depositing of soil brought down from the mountain by conveyer.

modern dynamic industrial processes. Furthermore, the preoccupation among Japanese landscape architects even today, with the *materials* of the old garden rather than with their spatial relationships, and the intuitive principles which lay behind them, makes it difficult for such designers to enlarge their vocabulary up to the new scale of industry.

There are, of course, exceptions to this gloomy picture; in fact there are many examples of large-scale construction in the landscape where the natural good taste and 'respect for nature' of the Japanese has intervened. When the long period of feudalism ended with the Meiji Era, the 'revolution' which occurred in the social, economic and religious life of the people, started not only a rapid expansion in productivity and commercialism, but also scientific and technical innovations. The rapid advance in highly developed scientific technology enabled the creation of large scale developments and construction schemes which would have been unthinkable in earlier years.

Some of the results of this technological progress, such as bridges, dams, harbours, and reclamation works, have achieved a simple dignity resulting from their 'fitness for purpose'. The best of them have succeeded in expressing what Sadatoshi Tabata, writing in the Congress Brochure 'Landscape Architecture in Japan' called the 'beauty of function'. On this scale of activity, however, the landscape architects of Japan have so far had no part, though they are aware of their potential role in such works, and would welcome the responsibility.

Japanese heavy industry has grown up largely in four industrial areas — Keihin, Chukyo, Hanshin, and Kita-Kyushu. Already however, these areas have become overcrowded and the local resources of land, water and transport have been exhausted. Heavy industry is therefore tending to expand on the outskirts of cities, along the coastlines, and also into

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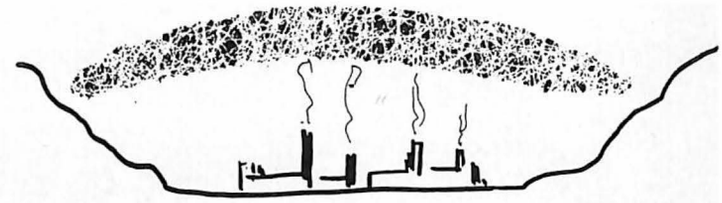

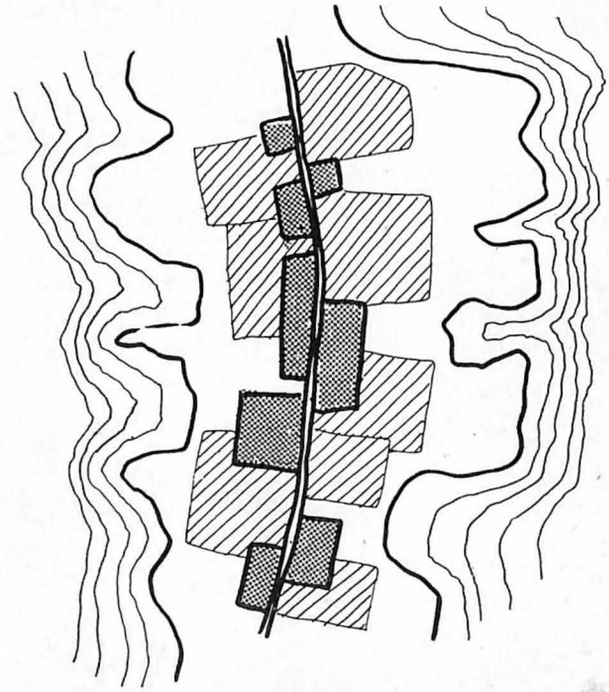

Initial location of industry

Second stage industrial and urban development

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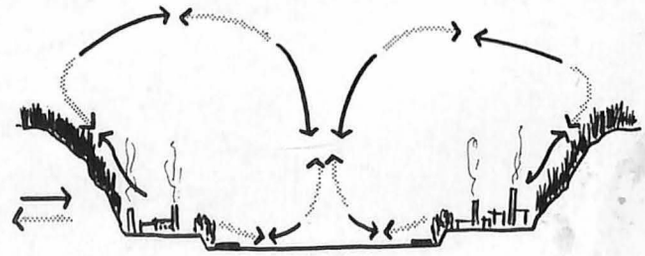
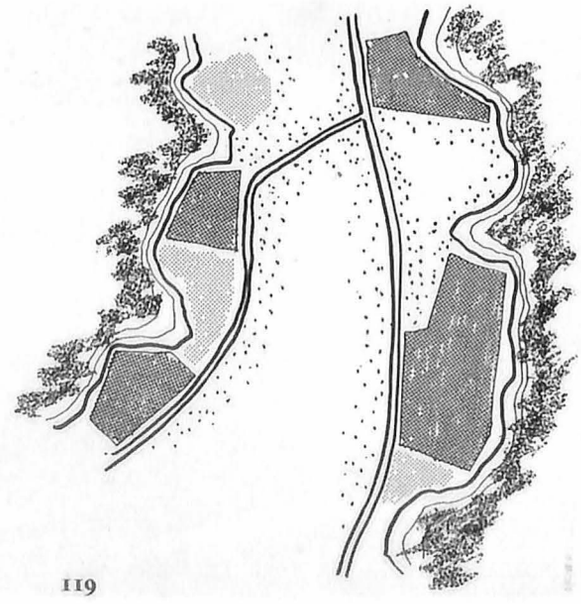


Industry and urban development

Tea and other non-irrigated cultivations

Open country with irrigated fields



119

118, 119
Japan, like many other countries, has allowed its industry and urban development to occupy the middle of valleys — gradually spreading out until all flat land is filled. This limits the land available for food production and recreation, and causes clouds of dust and smoke to hang over the valley (Fig. 118). Figure 119 shows how this situation could be planned, with irrigated fields in the centre of the valley, industry at the foothills, with the resulting benefit of better air movement by day and by night.

Sketches by Professor Cabral

120
The Kamishiiba Dam — the first 'arch-form' dam in Japan, built on the upper reaches of the river Mimikawa to provide electric power for Kyushu. A straightforward engineering job which sits well in the sharply mountainous landscape.

121
Idemitsu petroleum refinery on reclaimed land at Tokuyama on the shore of the Seto inland sea. A bald industrial statement, but the reclaimed land is planned to include a park with stadium and golflinks.

120

121

122

123

122
A modern steam powered electricity generating station at the mouth of Osaka bay.
123
A new factory for Toyota Motor Company.

Landscape architecture and modern life

natural landscape or good agricultural land. Crude coastal reclamation work is carried out for factory space and beautiful coastlines have already been lost. In an attempt to channel this sporadic development, new industrial zones are being designated, and some have already been planned and construction started. Unfortunately so far all emphasis has been placed on speed and economic achievement, and human environment has received little consideration. Short-term plans are useless for such ventures, because heavy industry will collect around it secondary industries and then light industries, which will require housing, roads, schools, and recreational facilities for their workers.

A new broad outlook in regional planning for industry is essential. Living conditions, open spaces, and recreation as well as the assimilation by the countryside of the new development and the protection of natural beauty must be taken into account. Studies for such master-planning must be a large-scale team effort, and the landscape architects of Japan must be brought in to play their part in the team.

HANS F. WERKMEISTER

Design and landscape character

Hans F. Werkmeister, landscape architect and studied many aspects of horticulture, obtaining diploma and doctorate in Agriculture; studied landscape design, town planning, history of art and natural sciences. Has been engaged in Government departments; specialized in rural planning, particularly in relation to restoration of destroyed landscapes, agricultural rehabilitation, and conservation.

Through thousands of years man has lived in intimate contact with nature. His lodgings, his workshops have been established of materials furnished by the environment.

Today such conditions are only exceptions. Meanwhile the technical age has overtaken us. The productivity of work has increased rapidly, many new building materials have appeared in the market. Steel, concrete and plastic materials have asserted themselves in all varieties and applications over all the continents. Never before have the architect and the engineer had so many possibilities for construction, but also never before have those who make the plans had such enormous responsibilities towards the coming generations. Each human artifact represents an intervention in the landscape; with each technical interference its aspect changes. But the important point to watch is, that the peculiar character of the landscape is not destroyed, nor even suffers any harm by wrong planning. Respect for the particular character of the landscape ought to be the absolute rule of conduct in all actions during planning.

It must then be considered how a design should be established:

1 At the beginning there must be a study of the natural factors of the near and distant areas. The nature and culture of the whole territory are to be taken thoroughly into consideration. Out of one's improved perception a diagnosis can be made.

2 The designer must have a clear knowledge of the expected function of a project in order to be able to plan for it.

3 The progenitor's creative ideas result in a product from the fusion of wish and reality. This is the 'spiritual' action of the mind which cannot be replaced by the workings of an electronic brain. Responsibility, understanding and originality are needed and must be expressed. Subtle intuition in feelings for the landscape is indispensable.

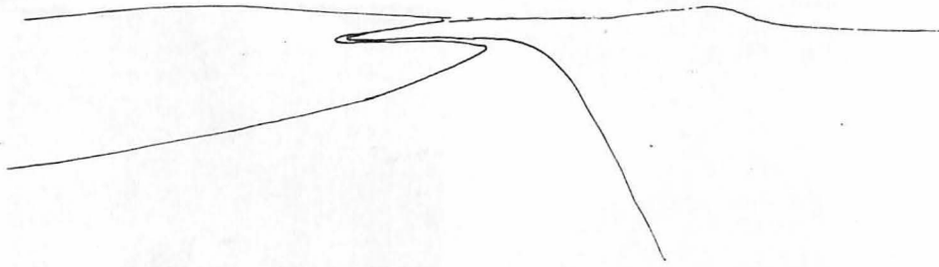
What then is the character of a landscape?

1 Analytically seen it is the summation of single elements such as mountain, hill, slope, plain, river, lake, sea etc.

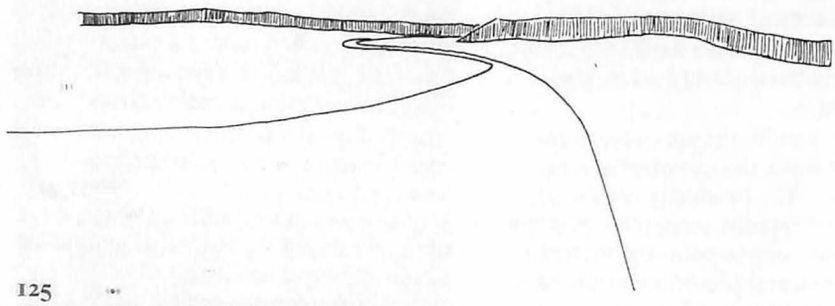
2 The inter-relation of these elements including the vegetation, forming typical spaces of quite different stamp, each one corresponding to the geographical location and climate.

3 The co-operation towards an organism of all these parts of the landscape in intimate connexion together with all the collective life, on and above the surface, in the water and in the atmosphere. Such an organism is a totality; it is always original and of special character. It cannot be reproduced artificially and carries the divine spark of creation.

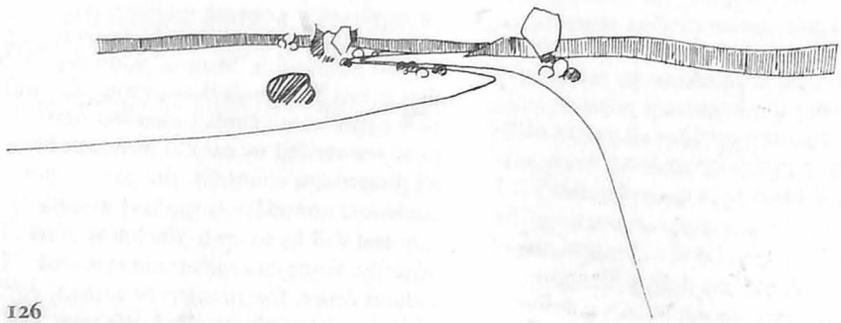
Now appears the man of the 20th century in explosively growing numbers and always more assertive in his claims to spread civilisation. Most of primitive nature has been melted away long ago and now exists only in small outposts rigorously protected by careful measures in all progressive countries. But the culture-landscape nowadays is strained excessively and will be so up to the limits of its capacity. Some enterprises are executed without order, forethought or system, others are properly planned. We must question: Are they planned rightly? Does the single house adapt itself into the landscape? Does the new settlement stand in the right 'tension' to the space? Do big industrial centres violate the landscape? Are the superhighways, railways and water-ways adapted to the character of the landscape with regard to routing and planting? There are a lot of questions, highly significant today for the whole world. One can say that on all continents much of the activity and development taking place is injurious. There is a danger today of thinking too much of function, and of allowing the *purpose* to become too dominant. Men have grown hard-headed, severely practical; the economic results predominate, and thinking in terms of profit-and-loss-accounts is made the rule.



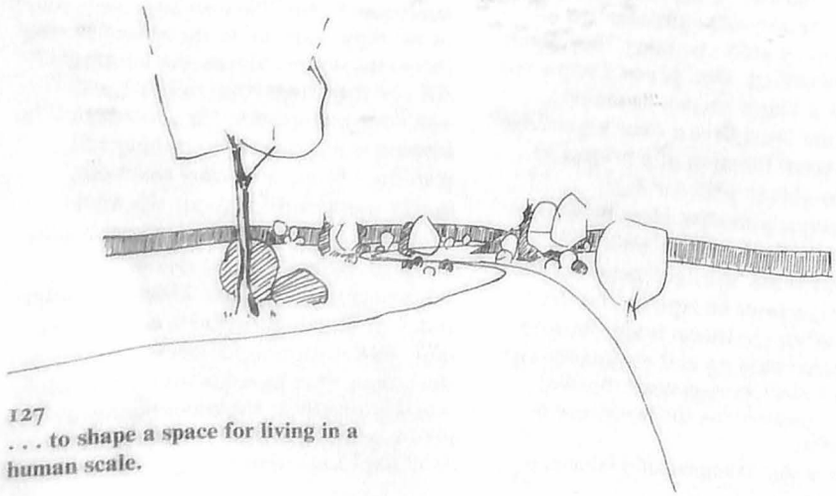
124
Lines of landscape formed by a winding road and a horizon.



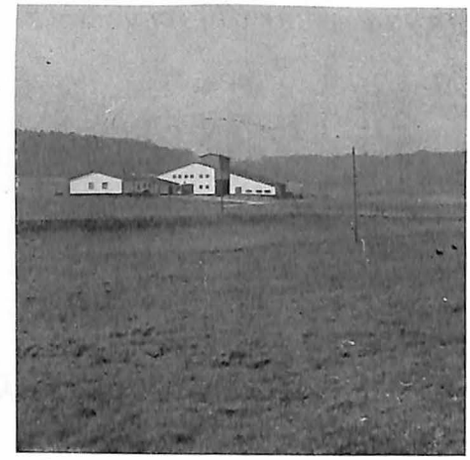
125
The wood in the background means a hold to the eyes.



126
Other elements of landscape help . . .



127
. . . to shape a space for living in a human scale.



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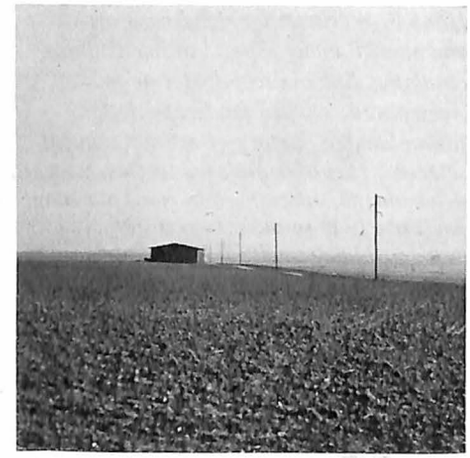

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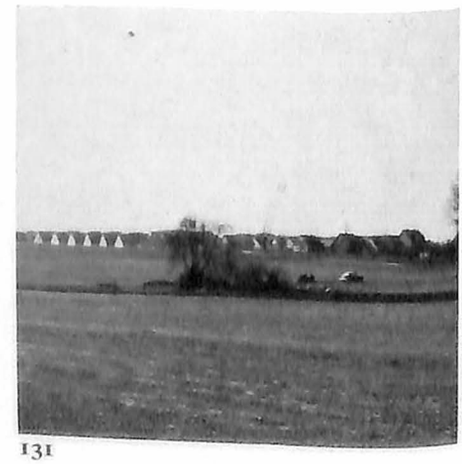


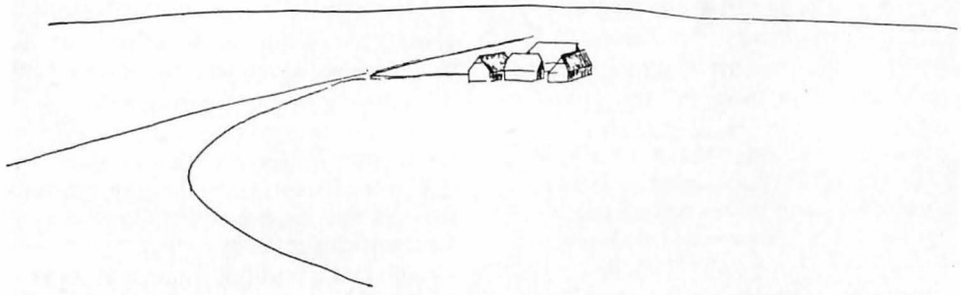
131

128
This settler sited his farm-house solely on grounds of expediency. After they are grown, trees and shrubs around the well-shaped buildings will create harmony in the man-made landscape.

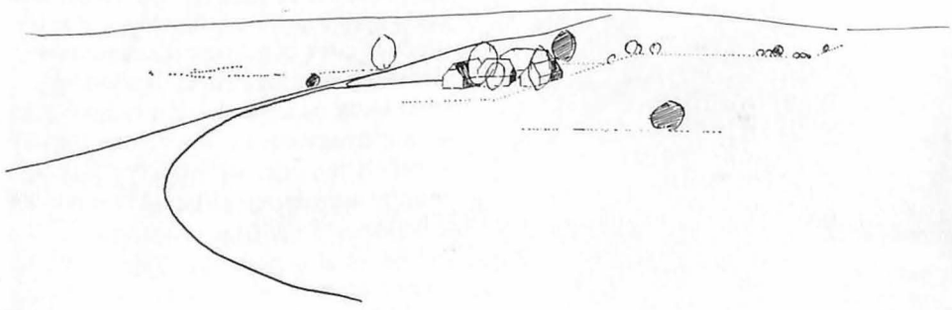
129
This plain in a rural area looks insignificant. Measures for landscape treatment should create new surroundings according to the original character of the country, taking into consideration the necessities of modern farming.

130
This valley in a national park of Germany is disturbed by crude afforestation. In some years the young forest will divide the valley. Landscape planning and management has to respect the natural facts.

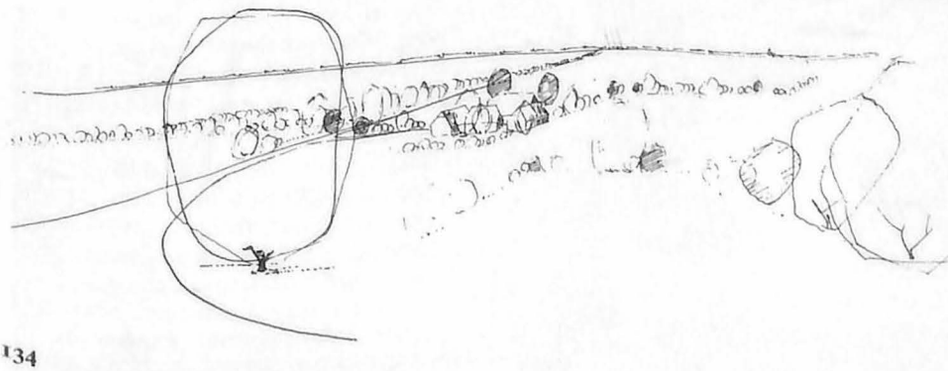
131
This edge of a small town is indeed 'built' but not 'shaped' according to a human scale. It is tedious.



132
This farm may be built in a very expedient manner,

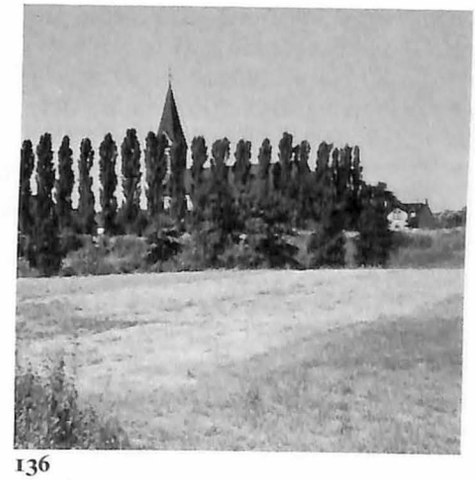


133
. . . but trees and shrubs



134
. . . completed to a cohering system, give dignity to an environment for human beings.

135



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137

135
Buildings along a street on a low hill. The character of a hilly landscape is disturbed.

136
The vertical of the tower of a church in a small German village should not be annulled by ascending poplars. Trees of round shape would correspond better to this landscape.

137
'Strewing' of houses on the open space is not a good method of town planning. Concentration and width, light and shadow work and nature, these are the poles of each creative idea. Regarding this surburban colony, none of these ideas was taken into consideration.

GARRETT ECKBO

Design and landscape character

Of course our small and great gardens are places of refuge for the souls of many millions of people. But the proportion changes rapidly, as the urbanization, and the technical concentration in the old and future industrial countries proceeds. Therefore, as a compensation for damages caused by civilisation, the open landscape, either well parcelled out with forests, fields and plains, or of poor character such as tundra, savannah, steppe or even desert, become more and more important. For the modern man who will breathe freely in extended landscape-spaces, distances are becoming always more insignificant. On the other hand, the more important becomes everything that is going to happen today and later, concerning architectural and engineering constructions in the landscape. Consequently it must be questioned: 'Are all persons, charged with planning, sufficiently instructed to be able to feel the essence, the soul of the landscape? Have they studied historical places with noble means and with the help of good, modern examples to be sure in their judgements?
From this we see that there is a lot of responsibility for the landscape architect. Whatever development takes place in a community, the landscape architect ought always to be a member of the design team. His target is not only to prevent things being done which would harm the landscape, but to help that each activity of human work contributes to the raising of the landscape-experience.
The 'spiritualization' of the landscape is the deepest sense of our work.

Garrett Eckbo. Landscape architect. U.S.A. — graduated with a Bachelor's degree in Landscape Architecture at the University of California in 1935; gained scholarship to the School of Design Harvard and received M.L.A.; has worked in offices on both East and West coasts, and since 1945 has been partner in the firm of Eckbo, Royston and Williams (later Eckbo, Dean, and Williams), continuing in private practice since that time. Lecturer, teacher, and author, having written prolifically for professional and popular periodicals, and has to his credit several well-known books on Landscape Architecture.

The landscape exists as a fact, independent of observers. Wild or tame, urban or rural, the continuity of the physical environment is broken only by major geographic elements or by the vision and motion limits of the observer. Character, good, bad or indifferent, is the result of relations between the observer and the landscape. Character judgments take place in the observer, as a result of his perception of the physical properties of the landscape, filtered through his attitudes which result from the accumulation of education and experience. Design is the process of solving physical development problems through a more or less creative search for form. The form results in character, which may vary from observer to observer. Old established landscapes which have developed slowly produce more consistent character reactions than new landscapes developing from hasty mass production technology with heterogeneous cosmopolitan form vocabularies, or contemporary efforts to meet new problems within old established landscapes. The design process is, of course, most important and most active in new areas or where there are new problems in old areas.
The essence of landscape character lies in the way people are related to the landscape. Since people cannot live in the landscape without structural shelter of some sort these relations develop through structures, and their resultant landscape reactions. Therefore the physical essence of landscape character lies in the relations which exist or are established between structure (buildings, roads, utilities, architecture, engineering) and nature (open space, atmosphere, climate, topography, vegetation, water, rock). These relations develop through landscape elements, rearrangements of nature in combination with de-centralized structures, often in patterns reflecting man's geometrical organization — agriculture, parks, gardens, recreation areas, public grounds. These 'landscaped' areas serve to establish

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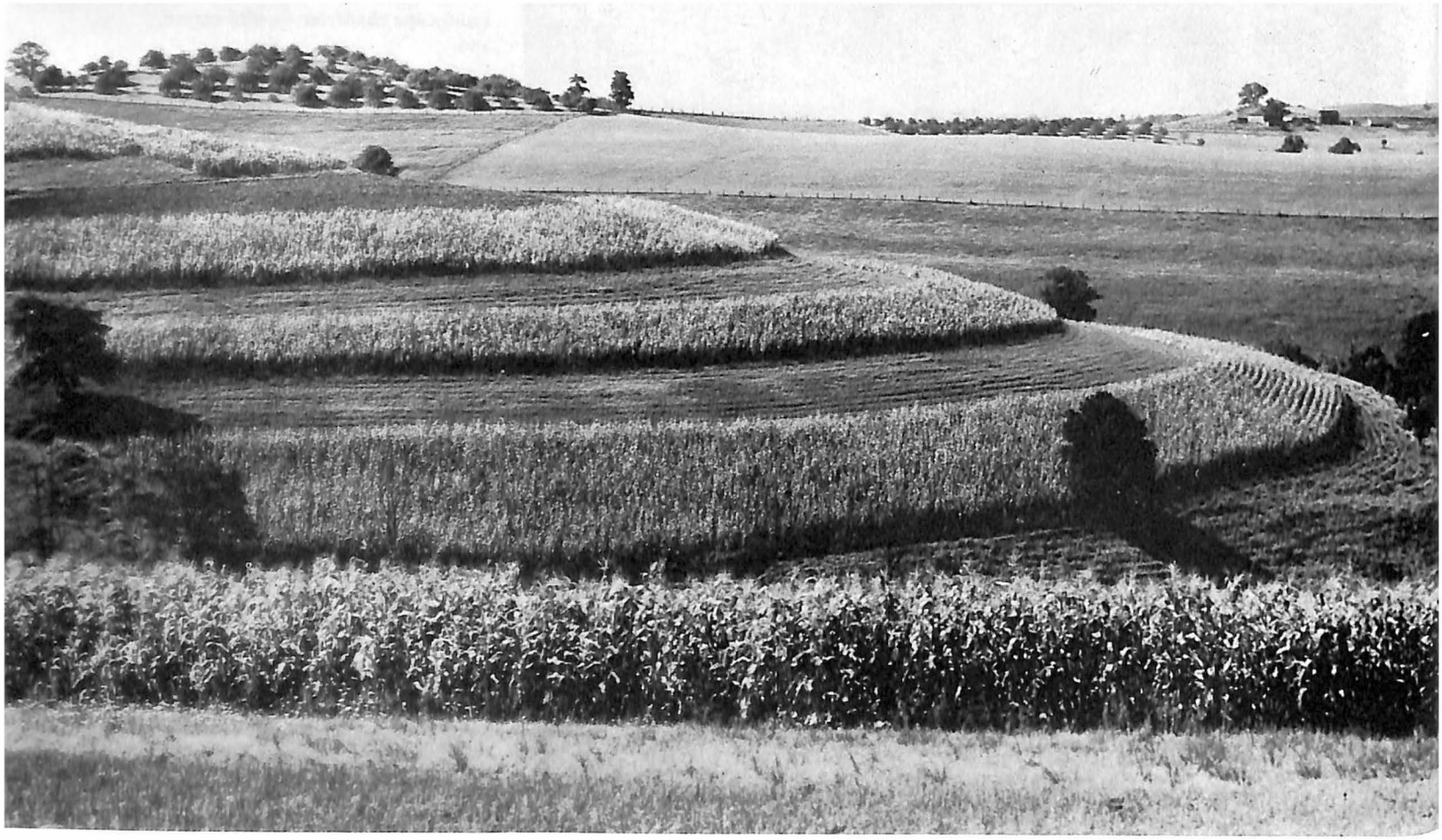
139

138
Landscape character — wild nature.

139
Landscape character — rock.

connection and harmonious relations between structures as new forces in the landscape, and nature, as the existing surrounding status quo neighborhood. Landscape character in a given area or region develops as a result of continuous interaction between new structures and landscape arrangements and the existing landscape. It is not merely a matter of protecting nature from construction or using nature as a setting for architecture — but rather of developing the best continuous, variable, balanced relations between the two forces.

This is difficult because designers all specialize in one limited area or another — construction *or* landscape development, not both together. Planners think in terms which are too abstract, too diagrammatic, too disconnected from specific physical results. No group officially thinks in terms of balanced interlocking relations between structure and nature or open space. It is precisely these relations which are fundamental to landscape character. Therefore, we have a great need for developing officially what happened more naturally and informally in handicraft cultures — a comprehensive and balanced view of the total landscape, wherever we are, as one continuous and more or less coherent experience. While many of us are trying to develop this in our day-to-day work, it will have to develop in the various design and planning schools in order to have real meaning for general professional design practice and its results in the landscape. Through the schools we may be able to find our way back to the simple, natural, balanced charm of the handicraft environment, and then learn how to condition and control mass production technologies so they will produce landscape of equally that high character for our booming, shattering, insensitive world.



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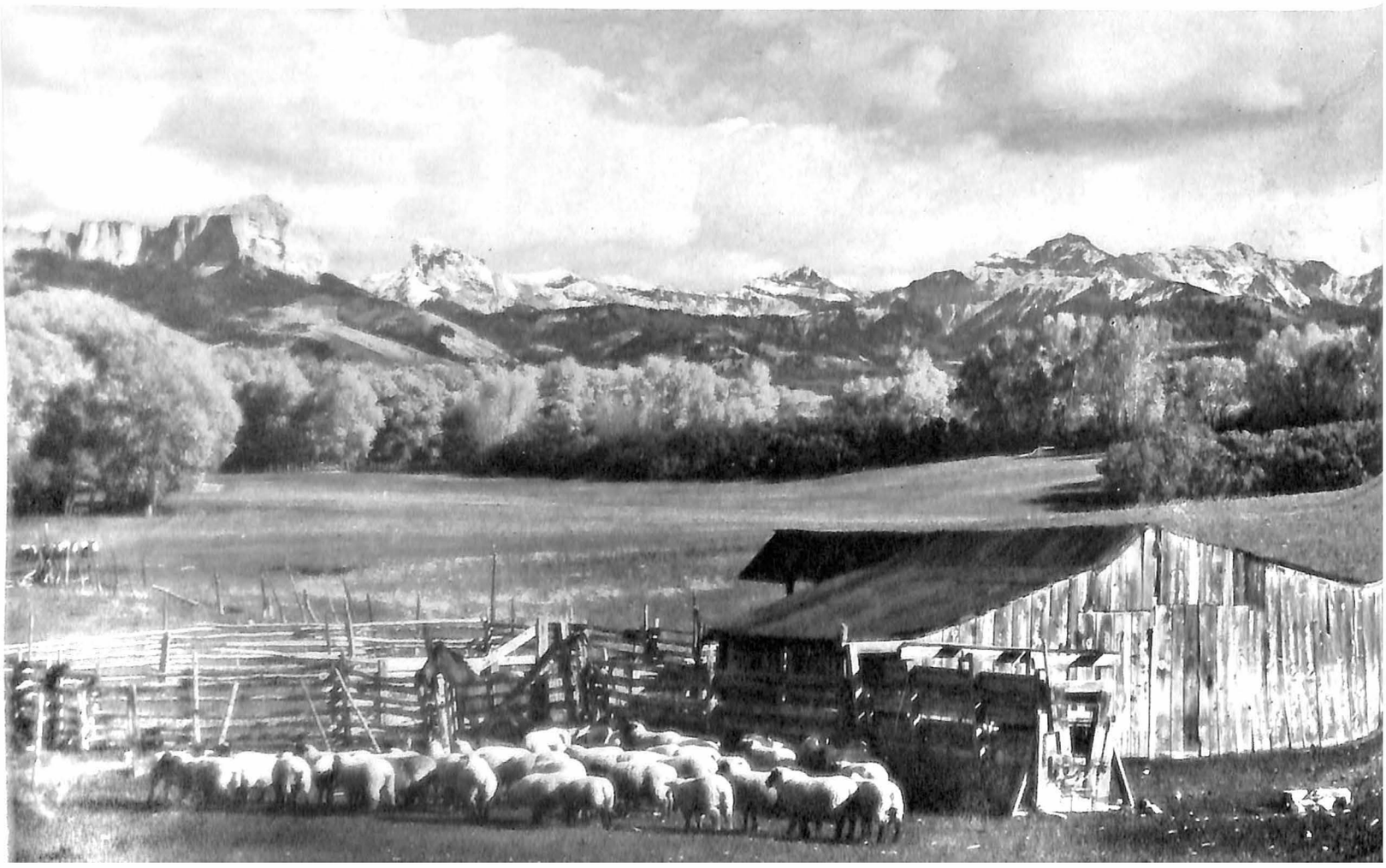

140
Landscape character — pastoral.
141
Landscape character — scale.
142
Landscape character — culture derived.
143
Landscape character — urban use.

142

143

PROF. EITARO SEKIGUCHI

Landscape architecture of Japan in modern life

Eitaro Sekiguchi, landscape architect — graduated from Tokyo University in 1922, and two years later became Associate Professor at Kyoto University. Studied abroad in U.S.A., Canada, and Europe for two years, returning to Japan to Kyoto. In 1939 became Professor in Landscape Architecture at Kyoto University, twenty years later becoming its Professor Emeritus. President of the Japanese Institute of Landscape Architects from 1962 to 1964.

1 THE GARDEN

The Japanese garden has a characteristic style related to the climate of Japan and the national character of the Japanese; but at the same time it has long been influenced by foreign cultures, just as have other fields of Japanese art.

In the Meiji Restoration (1868) many things Western were introduced to Japan, so at that time the European style of architecture and garden design were newly established in the country. A Western style garden might be built in English or French or Italian style within the grounds of a mansion of the noble or the rich. However it was usual that such a garden occupied only a part of the site and that the whole was a compromise between Japanese and European styles. So appeared in this country the open lawn, characteristic of the English landscape style garden, the geometric formal style garden of Italy or France, and the terrace surrounded by balustrade, with fountain, ornamental vases and sculpture.

This kind of European-style garden was generally built with a house of Western style, and usually only with the houses of the upper classes, while the general public made gardens in one of the traditional Japanese styles such as 'natural landscape garden', 'flat garden', 'stone garden' or 'Roji-style' garden where there was a tea house.

In the middle of Meiji era, the Japanese style garden had taken a step forward from the former traditional pattern to a new landscape style. This progress arose out of a dissatisfaction with the old landscape gardens of fixed style, and it refreshed in a practical way, the Japanese garden by sincere observation and study of real nature. So a new kind of naturalistic garden spread out in the western and eastern parts of the country. For instance, the so called 'Kyoto style garden' is one of these types. It grew from the middle of Meiji era and even today many examples are left in Kyoto.

Then in about 1920 (in about the 10 th year of the Taishô period) there appeared in Japan a movement for the improvement of living conditions. In this movement some people advocated, — under the influence of the practical and functional garden which was growing remarkably in Germany, England, and the United States, — the point of view that the garden should be more practical than scenic or enjoyable. On the other hand, however, there was indeed a strong attachment to the traditional styles, so that the functional movement did not progress very far in respect of the garden. Thus the garden of Japan had changed somewhat from the Meiji era, through the Taishô era to the Shôwa era up to the time of the Second World War. At that time there were three main design tendencies in the Japanese garden, that is:

1 the imitation of the European Garden,
2 the perpetuation of the traditional garden,
3 the new naturalistic landscape style garden.

Although endeavours and studies to improve the garden were meanwhile being made, together with the pressing influences of European science and technique, good results were not obtained in small garden design. Nevertheless, as regards public open space, (as is referred to later) a considerable degree of progress was made. However, in the period following the Second World War, there have appeared various changes in the gardens of Japan just as in other arts.

First of all, new styles of garden design have come since the War, which were not known in the past — for example, the so-called 'modern style' garden and the 'abstract' garden. These are characterized by the use of lines and forms which, in the composition of gardens, are expressed as flowing lines or free lines and the free forms composed by them.

Traditional gardens are divided by their forms into two types: a natural form, and an architectural form, to one of which type all gardens, of whatever time or

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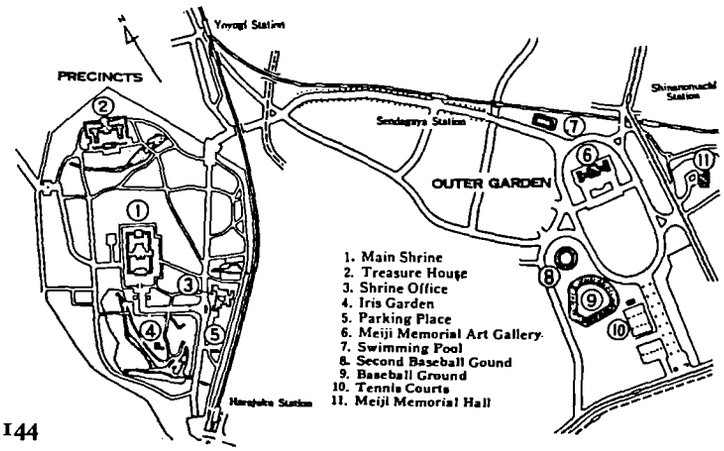
National Stadium at Meiji shrine, Tokyo.



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place, belong. Now in recent years we have, as the third type, the modern style garden that has come to be constructed in Europe, America and more recently, in Japan.

I think that we can now expect to see the satisfactory development of the modern style in future, also in Japan. Another new type of the 'abstract' garden has also been attempted in this country under foreign influence, developing out of the historical 'stone' garden.

The stone garden, 'dry landscape' or Karesansui garden, was developed in the fifteenth to sixteenth century (in the Muromachi era), and yet there are many masterpieces of this style left even today. This type of garden is now high-lighted by a new understanding of it, in that the artistic appreciation of today is able to accept the value of abstract forms in their own right without needing to search for literary associations or meaningful symbolism.

Since the War, apart from this revival of the stone garden, which aims at the exquisite beauty of plastic design, there is a growing interest in the functional garden suitable to the real life of today. It comes naturally from the earnest interest of people in home-life in spite of the postwar housing shortage. From the natural spirit of inquiry comes the idea of utilizing the garden as a space for daily life, that is, as an outdoor room. Though the development of this outdoor room has not been wholly satisfactory as yet, its better assimilation can be expected in the near future. Study and development now being carried on concern the third form of living-space, — the inter-relation of indoor and outdoor space which combines more closely the two former living-spaces of house and garden.

2 THE CITY PARK

It was in 1873 that the first public park was constructed in Japan. In that year according to the Cabinet Order 16 on the 15th of Meiji telling each prefecture in the country to organize parks and to choose the proposed sites for them, Tokyo Metropolis designated in June of that year the first five parks, which were Asakusa Park, Shiba Park, Ueno Park, Fukagawa Park and Asukayama Park. Since then public parks have been constructed all over the country. Also, quite early on, the government appointed as parks the precincts of temples and shrines which people have been used to visiting for their pleasure, and, in addition natural scenic areas, and the gardens of castles of the feudal lords in the Edo era.

Thirty years later, in 1903, Hibiya Park in Tokyo was completed, which was the first modern park in Japan designed as a park from its beginning, after the model of a European park. If Central Park in New York is taken to be the first modern park in the world then the first modern park of Japan was created fifty years later.

During the Taishô era (1912—1926) the forest garden on a large scale was founded in the Garden of Meiji Shrine, which was surely epochmaking in the history of modern landscape architecture in Japan. This garden is divided into two parts, the inner and outer gardens. In the inner garden of 178 acres (72 ha.) there are the Shrine Building and its Treasure House; in the outer garden of 118 acres (48 ha.) there are the Memorial Art Gallery of the Emperor Meiji, a Memorial Hall of the Constitution, and various sports facilities. Thus it fulfills in an excellent way, the function of a city park.

It took twenty-three years to build this garden, and many top-level engineers in those days took part in planning, designing and constructing it and did their best at all points, some of them being sent to foreign countries to investigate or study foreign landscape architecture, for the purpose. This is therefore an important monument in the history of the modern Japanese garden and it has contributed remarkably to the subsequent development of landscape architecture in this country.

The outer garden forms a big sports centre which includes various sports facilities, such as an athletic stadium, a swimming pool, a Sumo-pace, a baseball ground and a children's playground. It takes an important place as the first centre of this type. The Athletic Stadium was used, after post-war reconstructions, as the Main Stadium for the Olympic Games held in Japan in 1964.

From 1919, when the City Planning Act was proclaimed, the construction and improvement of cities had been carried out on the basis of modern scientific techniques, and the works of park and open space construction had been made gradually. In 1923 there occurred the great earthquake in Kanto district, so great that large parts of Tokyo and Yokohama had to be reconstructed. Taking this opportunity, the authorities developed the City Park still further. Recognizing how important a park can be in time of natural disaster, from the viewpoint of prevention of spread of fire, as well as a place of refuge and safety for the public, enlightened people tried to increase the area of parks and open space, according to a reconstruction plan. For example they made Hamacho Park, Kinshi Park and Sumida Park in Tokyo (well-known as the Big Three Parks), and Nogeyama Park, Yamashita Park and Kanagawa Park in Yokohama. Furthermore fifty-two children's playgrounds were founded nearby the damaged primary schools in Tokyo.

So, as the result of the national disaster there appeared in Tokyo and Yokohama a number of new parks, which made great progress in design quality. The landscape work involved in this reconstruction brought landscape architecture in the country to an important turning point, and, as much as in the construction of the Meiji Forest Garden, gave a chance for great progress in garden design. The

children's playgrounds settled near to the schools became later a model of this type of park and spread to other cities.

In Europe, it has been usual for many years to manage the cemetery like a park. As the first cemetery in park style in Japan, Tama Cemetery, in Tokyo, was constructed in 1925. Later the cemeteries in many districts were made in similar style.

Following the accumulation of data by investigation, a Standard of Planning was established in 1933 by the City Planning Authorities in the Ministry of Home Affairs, and works of city planning were promoted all over the country. This included parks, and open spaces, and the planning of general parks, the designation of scenic areas, and land reallocation were rapidly carried out.

The publication of the planning standard of land reallocation required that more than three per cent of the area of a district should be reserved as a park (children's playground or neighbourhood park) and this was made legally effective.

Since then small parks (children's playgrounds) have been made in new areas by land reallocation.

After the war, in 1954, the Land Allocation Law was proclaimed, according to which, more than three percent of all allocated areas, and more than 3 sq.m. per head of population must be provided for open space.

Thus in Japan children's parks are made of statutory size in allocated areas according to the rule, and these therefore have special importance in regard to the foundation of parks in a city.

The 'scenic district' is established to preserve natural beauty in the City Planning District, and from 1926 till now, 655 scenic districts of 300,000 acres (120467 ha.) area have been appointed in 176 cities. Although they have in character more significance, in their mere existence, rather than in their utility value, they are, indeed, important as the open space of the city.

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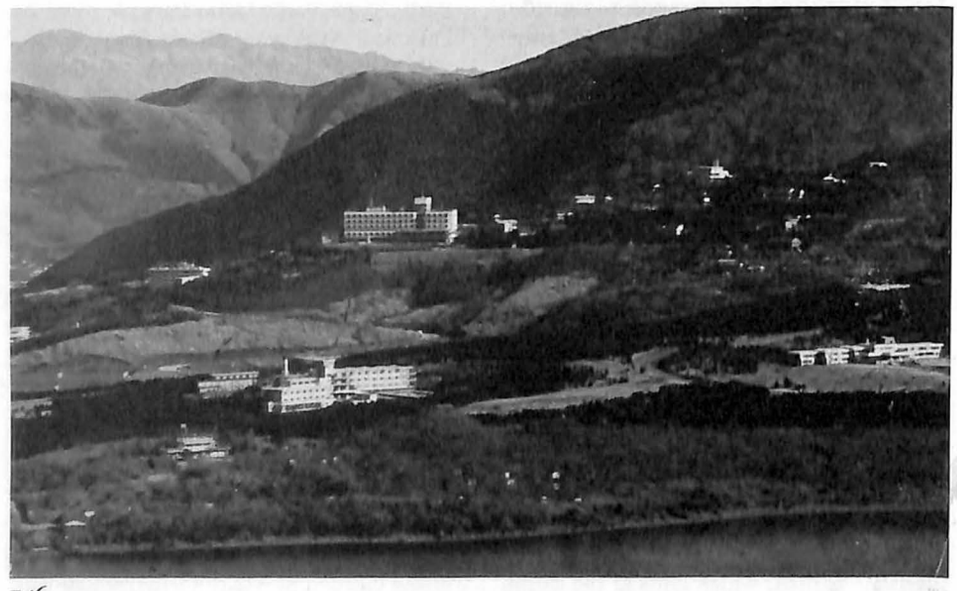

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Komazawa Olympic Park, Tokyo, Japan. The park was used as a comprehensive sports center during the 1964 Olympic Games. The master plan of this sports park was made by a team with E. Takayama and M. Yokoyama as chief designers. The stadium was designed by S. Murata and the gymnasium by Y. Ashihara. The landscape design was made by the Olympic Facilities' Bureau of Tokyo Metropolitan Government under supervision by a landscape architect T. Moriwaki. Especially, by the adoption of a thorough circulation system, the design of the central square and the landscape planting of the whole area might be said to be a fine example of park design with functional and beautiful unity.

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Kojiri Recreation Center, Hakone District, Fuji-Hakone-Izu National Park. General view; camp site on the shore, students' lodge at the back of it, and people's lodge at the right of it.

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Plaza in front of Imperial Palace, Tokyo.

During the Second World War, the parks and open spaces were involved in the state of emergency. Some were put in and around the city as open space or as the open-space-zone for air-defence or for evacuation. Some of them were preserved still after the War as parks (for example, Koganei Open Space in Tokyo or Hattori Open Space in Osaka) or as green zone (for example, the former open-space-zone for air-defence) or as park-ways (for example the fifty metre wide park-way-like streets of Oike, Gojo and Horikawa in Kyoto), so they contributed, though irregularly, to the increase of open spaces in the city.

With the end of the war, the policy for city parks in Japan met very difficult problems. It is even said that the park policy was set back thirty years on account of the occupation by foreign arms and the Agrarian Reform, and by the removal of the precincts of shrines and temples from the park because of the division of politics and religion according to the New Constitution. But on the other hand various policies to reconstruct the war-damaged areas and develop new lands were carried out, so that new progress in the establishment of parks and open spaces has kept pace with the needs of the times.

Since the war, the following events relating to parks and open spaces, are worthy of special mention.

1 the Establishment of the City Park Act
2 the Establishment of the Tree Preservation Act
3 the Establishment of the green zone, the open space and the conservation district
4 the Development of sports facilities.

After the long discussion about the necessity of a law on the city park, it was, at last, in 1956, proclaimed by the name of 'the City Park Act'. This Act covers various matters about the foundation or the management of the city park, and concerning the *standard* of the park in respect of the most important things concerning them. Briefly these points are as follows:

The park should have 6 sq.m. per head of population in municipalities, and more than 3 sq.m. in cities. Parks are divided into six types, such as the children's playground, the playfield park, the neighbourhood park, large landscape recreation park, and the scenic park. The standard effective distance for any child to reach one of the children's playgrounds is 250 m and to reach a neighbourhood park, 500 m. For other parks the Act provides not numerically but abstractly that each park should be arranged so that people may use it easily. As regards the standard of ground area, it says that the children's playground must cover 0.2 Ha. ($^1/_2$ acre), the neighbourhood park 2 Ha. (5 acres) and other parks must have enough area to function effectively according to their purposes as city parks.

We cannot be contented, of course, with this standard, which is much inferior to that of Europe or the United States, but which is unavoidable under the present conditions of the country. In fact many of Japan's city parks are, so far, even below *this* standard, in spite of the earnest efforts of all cities. The following list gives the present area per head of population of the City Parks according to the population of the cities.

The list shows that on average the actual city park has no more than a third of the minimum area per head of population which is provided for by the Law. It shows also how the public and the statesmen lack understanding about the importance of parks for the result of park establishments during ninety years to be so unsatisfactory as this.

Recognising this situation, the Construction Ministry that manages the city parks, made a long-range plan that has for its purpose, as a first step, to establish by 1980 sufficient parks to provide 4 sq. metres area per head of population. It is, however, very difficult to promote the creation of parks even to this extent because of the rapidly increasing city population, the rise in price of land, and the shortage of necessary budgets for the works.

In 1946 the 'Special City Planning Act' was proclaimed for the reconstruction of

Population of the city	Cities (%)	Area of the park per head of population in sq.metres	Area per head of population divided according to type of Park in sq.metres: Ordinary park	Playfield park	Children's playground
more than 1,000,000	24.6	1.1	0.7	0.2	0.2
1,000,000—300,000	9.6	2.1	1.6	0.3	0.2
300,000—100,000	15.2	5.0	3.9	0.8	0.3
less than 100,000	50.6	1.7	1.5	0.2	0.04
Average:		2.1	1.7	0.3	0.1

war-damaged cities, according to which the 'Green Zone' was appointed as a new kind of green area in the city. The green zone was also introduced in an undamaged city, like Kyoto, to which the 'Special City Construction Act' was applied.

Furthermore the 'Law for Improvement of the Capital Region' was made in 1956, according to which the improvement plan of the region around Tokyo (within a radius of 100 km of Tokyo Station) was to be carried out. Following the model of the City of London, the 10 km wide loop greenbelt is planned to be created between the City proper and the developing district around it.

A year after the end of the War in 1946 the 'National Athletic Tournament' took place in Kyoto, which is, so to speak, a revival of the annual athletic meeting in the Outer Garden of the Meiji Shrine before the War.

Since then such tournaments have been arranged to take place in every prefecture, in order to promote and establish sports facilities. So, while landscape architecture in Japan is hesitant in its development and progress, sports facilities for athletic games are making splendid progress. The Olympic Games held in the autumn of 1964 encouraged not only Tokyo, but also other cities to complete such facilities for large scale sport.

On the other hand, the ordinary park or the playing field that the younger generation uses for its recreation, (and that is the most desirable of all city parks), is lacking both in size and number. It is the pressing need of today to increase such parks.

3 THE NATURAL PARK

It was over sixty years ago, in 1904, that the first National Park in the modern sense was established in Hokkaido. As recently as 1950 with the revision of the National Park Law the newly designated 'Semi-National Park' was introduced.

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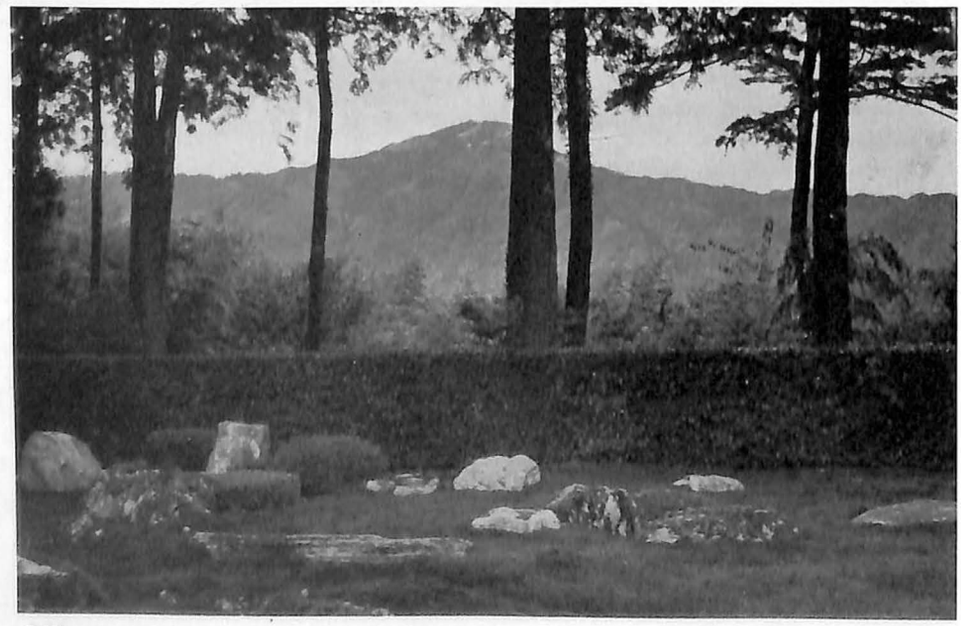

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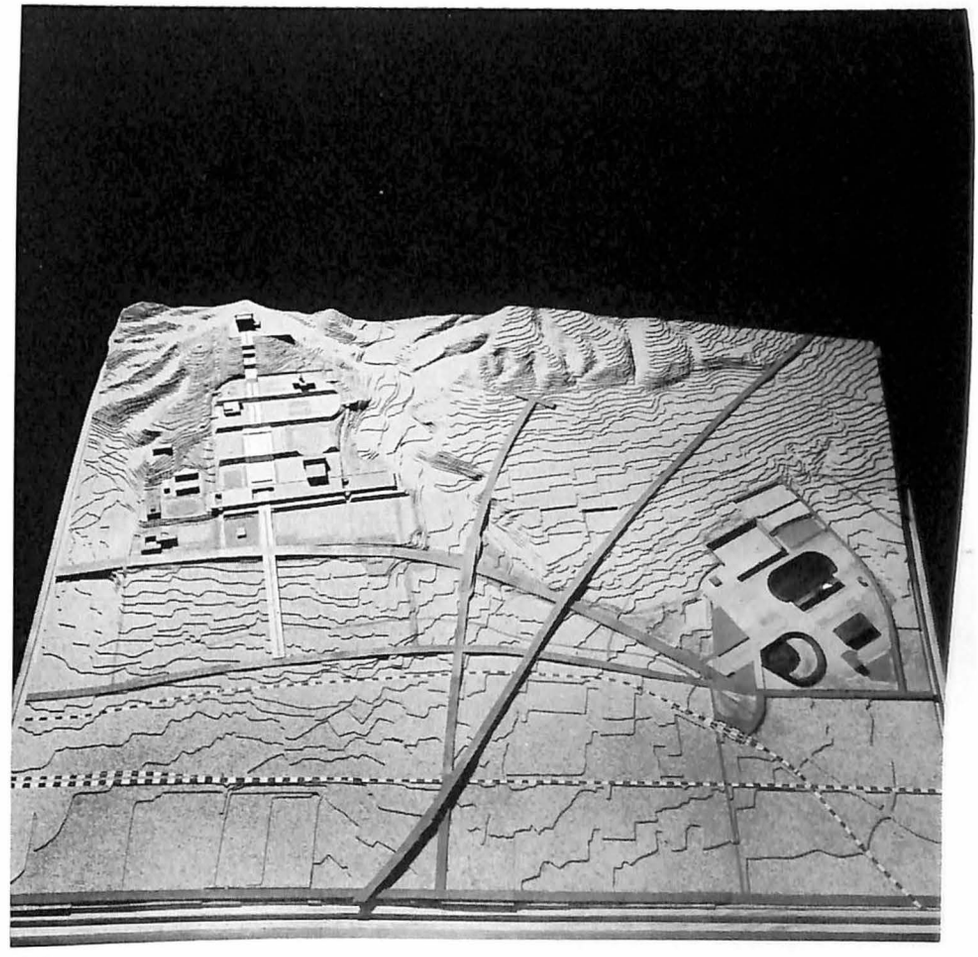
148
Littoral heavy industrial area of Kitakyushu-City.
149
Entsuji-Temple Garden, Kyoto.
150
Model of Shizuoka Cultural Center. See also fig. 33 and 34
151
Courtyard Garden of the Tokyo Festival Hall (Architect: Kunio Maekawa; garden by Masayuki Nagare).



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Every National Park and Semi-National Park is appointed by selecting the most excellent scenic areas that represent the Japanese landscape. The purpose of these parks is to preserve and to protect the fine landscape for ever and to serve people's health, recreation and culture. Furthermore the National Park is opened also to tourists for international sight-seeing and friendship between nations. In 1957 in place of the previous law, a new enactment established the 'Natural Park Law' which gives birth to a new system of Natural Parks containing the former National Parks, Semi-National Parks, and the Prefectural Parks.

Now it is necessary to care, in managing the Natural Park, for two principal purposes — the protection of nature, and service to the health and recreation of the public.

Concerning the first point, we must not only preserve the scenery in all areas of a park, but also conserve officially the important scenic area by appointing it as a special area or a special protected area. As for the second point it is necessary to make for the public service in each area various facilities, such as traffic access and control, hotels or resting places, observatories, sports grounds, Zoological or Botanical gardens, Museums, etc.

Recently efforts are being made to construct National Recreation Centres in managing Natural Parks especially in a National Park or Semi-National Park. This is a highly developed area in a Natural Park which is deliberately constructed as a counter-measure to the rapidly increasing influx of visitors to the Natural Park. It consists of various synthetic recreation facilities arranged around a cheap and simple lodging like the 'National Home'.

The construction of the first National Recreation Centre was begun in 1961 and there are twenty such places scheduled for the first five-year-plan, out of which twelve places are already sited, and the

greater part of them are under construction or already under management. Included in the facilities of the National Recreation Centre are paths, parking places, lawns and plantations, rest places, comfort stations and water and drainage services. Places under staff control include ticket booths, lodgings, dining lodges, cabins, camping areas, bathing places, boating places, skiing slopes, rope and cable-ways, lifts for sight-seeing, museums and aquariums. The effective area of a Centre is 125—500 acres (50—200 ha.) and its capacity for accommodation is, according to type, 800—2,000 persons a day. Such a complete institution will encourage more visitors than ever before to visit the Natural Parks.

A further development in the planning stage today is a 'Marine Park' as a new institution of the National or Semi-National Park. It will be useful not only to protect the marine animals and plants and to observe their ecology, but also to make them available for sight-seeing.

4 THE TRENDS OF NATIONAL LIFE AND THE NEW LANDSCAPE ARCHITECTURE

The previous pages give an outline of the garden, the city park and the natural park since the Meiji Restoration. Since the end of the War the national life has been much changed and there are indications of new ideas also in the landscape architecture of Japan.

It was not until about 1955 postwar, that the national life reached the level of prosperity equal to that before the war. At that time the standard of living was elevated step by step until in about 1956 it began to be tinged with modern life free from the former monotonous living. The increase in expenditure for leisure time is particularly remarkable.

An investigation into household economy in 1962 shows that the most remarkable item of growth in general expenses in recent years is cultural and entertainment expenses for social and leisure purposes. The cultural and entertainment expenses and the social expenses a month on the average of townspeople in 1962 grew sharply compared with that of the previous year, respectively by 20.8% and 20.0%. The increasing percentage is shown to be larger in the class of low income than in the class of high one. So the economical difference between the classes is decreasing in Japan.

In this way the remarkable and incessant increase of leisure time and leisure expenditure causes the phenomenon known under the name of 'Leisure boom' or 'vacation boom', in which people rush to the mountains or to the bathing beaches in summer or to the skiing and skating areas in winter and to sightseeing places, golf-links and amusement facilities (together with the health centres) during all the year. Now, the sightseeing tour that was formerly possible only to the comparatively high income group has become popular.

Besides the increase of leisure time, the change in thought of people about recreation or sightseeing, and the bad social life and workday environment are considered as the causes of the increase in popularity of outdoor recreation and sightseeing among the population recently.

The increase of leisure time is a phenomenon throughout the world, which is found also in Japan. In discussion of the relation between labour and rest, the Japanese were once considered to be diligent and liable to think only of working, and to lack the right valuation of resting or playing. Nowadays however they have come to regard recreation as a necessary part of life. With the increase of leisure time they enjoy various recreations making good use of their rest, and take sightseeing as a pattern of life without regarding it as an unusual luxury.

Under such social circumstances what can be said of Japanese landscape architecture in the future?

The influence of the Japanese garden

DR. YOSHINOBU YOSHINAGA

Its history and principles

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The oldest garden in Japan, as recorded in literature was that of Sogano Umako. He built his new house on the Asuka River in Yamato Province (Nara Prefecture), around 620 A.D. It was surrounded by a garden, with a small pond and island. People looked at it with curiosity, and nicknamed him 'Shimano-Otodo' or 'Minister of the Island'.

The word 'shima' or island, also meant a garden, and so his nickname could be interpreted as 'Minister of the Garden'. In the ancient anthology 'Man'yoshu' there are many examples in which a garden is called an island.

It is likely that this 'shima' or island had an etymological relationship with 'an island in the sea'. The fact that the garden was called 'shima' is important in clarifying the historical development of the form of the Japanese garden. The facts show that the Japanese garden originated from 'the landscape into garden'. Even the garden which belonged to Sogano Umako, who was of an influential family of those times, was a primitive one with only a small pond and island. Thereafter, however, garden-making developed in a remarkable way.

In a later garden of 689 A.D., the island was connected with the shore by a Chinese-style vermilion coloured bridge. Skilful arrangement of stones and rocks along the shore symbolized a windswept and wave-beaten coast and the coastline was beautiful with curves and inlets. Mandarin ducks and other birds swam on the pond. It is evident that the garden was designed with the scenic beauty of the seashore in mind.

During the Nara period, many gardens were constructed. Many of them depicted the scenic beauties of the seashore. In order to depict the reefy shores, gardeners dug ponds, arranged rocks and stones, or spread white sands and ornamental pebbles to represent the beach.

Spreading white sand in the garden was a way of garden-making which distinctly represented the scenic beauty of the sea, while at the same time beautifying the garden itself and was regarded as etiquette for guests:

The moral sense of the period caused respect to be paid to purity of mind, and detested any kind of unclean things. White and pure sands were therefore regarded as undefiled nature representing the host's purity of mind towards the visitor. In later years we realize how white sand in the Japanese garden has played an important role in stressing the aesthetic quality of the garden as a whole and has come to be regarded as an indispensable material for decorous and ceremonial purposes. It is very interesting to note that the art of depicting seashore scenery developed in landlocked Yamato Province (Nara Prefecture). The cause for this is open to speculation, but it is likely that experiences in sea travel, which was then a new adventure, impressed themselves on people's minds, and the never-to-be-forgotten-memories of the inland sea's scenery became the objects of yearnings which were recalled in the form of a garden. The small-scale copy of sea-scape was then the basic form of the Japanese garden to which were later added artificial hills and springs.

In 794 A.D. the capital was removed from Heijokyo (Nara) to Heiankyo (Kyoto). Kyoto was selected as the capital because of its scenic beauty, with 'mountains purple and water bright', as well as for its convenient trade location, and from the political point of view. At the time of becoming the new capital, Kyoto had far better mountain views than now, with an abundance of water, and a natural environment of hills, forests, ponds and lakes. Its natural surroundings could also offer excellent garden-making material such as fine trees and stones in variety. The garden-making which skilfully utilized these rich and varied geographical features contributed towards the refined development of garden art in Kyoto.

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A precise detail from the corner of a tea pavilion in the garden of Katsura Detached Palace, Kyoto.
153
Contrasting stone textures, Mitsui Club garden.

through its thousand-year history. Had the capital been chosen at a place other than Kyoto, the remarkable development of garden design would not have been possible.

Of the various characteristics found in the Japanese garden, the most distinct and beautiful one is *ishigumi* or 'stone arrangement'. When the art of stone arrangement developed to an extreme, it came to control the whole garden, giving birth to the so-called *sekitei* or 'stone garden'. Aside from the ideological reasons to be explained later, we may say that the development of stone gardens in Kyoto was caused by the abundant supplies of fine garden stones in the region around the city.

To give some examples, stones from the region of Mt. Kurama at the north of Kyoto have been known for ages as fine garden stones under the name of *Kurama-ishi*. These are granite which contain minerals including iron. The iron studs the various parts of this granite. As this iron oxidizes by weathering the stone surface comes to present a warm rustic tone. It has been claimed that no other stones can surpass this stone for *kutsunugi* ('shoe-removing' or the step-stone) or for *tobiishi* (the stepping-stones) in the *shoin* (Japanese parlour or study) garden and *chaniwa* (the tea garden). *Tsukubai* and *chozubachi* (short or tall stone basins) also make use of the kurama-ishi.

Kibune-ishi, a well-known coloured stone, was produced in the Kibune region, while from along the Oi River came blue stones with white stripes known as *oigawa-ishi*. Black pebbles called *kamoguro* were found along the Kamo River, and small reddish pebbles called *kamiyagawa-ishi* were gathered along the Kamiya River near Kinkakuji.

The granite quarried in the Kitashirakawa region, called *shirakawa-mikage*, is comparatively soft, and has been treasured as material for making stone lanterns on account of its fast rusticating nature. The coarse white sand generated by the decomposition of this granite is called *shirakawa-suna*, which has been widely used for spreading or mound-making in the garden. For instance, the white sand spread in the stone gardens of Ryoanji and Daisen-in, or in the *hojo* (the priest's quarters) garden of the Daitokuji Temple, is this Shirakawa sand.

Stones of the andesite group, which were most commonly used garden stones, were abundantly produced in the mountains near Kyoto.

All the stones mentioned so far are either mountain or river stones, but, along with the popularity of the stone arrangement art there came strong demands for *umiishi* or sea stones also. Since Kyoto is away from the sea, these sea stones were treated as precious gardenstones. Quantities of *aoishi* or blue stones and pebbles found along the coast of Saiga in Kii Province (the present Wakayama Prefecture) and on the Ise-Shima coast (now in the Mie Prefecture) were used in Kyoto gardens. These blue pebbles of chrolite-schist are beautiful blue-colour stones with white stripes on the surface. People of Kyoto were able to obtain those sea stones by means of river transportation. These sea stones are seen used in the gardens of Sambo-in Temple, Ninomaru of the Nijo Castle, and in the major *shoin* garden of Higashi Honganji in Kyoto.

For many years the garden making in Kyoto took advantage of the surrounding natural scenery with mountains near, and water in abundance. Although the gardens built early, such as the Shinsen- en garden and the Reizei-in garden in the Sakyo district, and the Junnain garden and the Suzakuin garden in the Ukyo district, were all located within the capital city, many natural springs, ponds, marshes and forests were incorporated in the design of these gardens.

Although the Japanese garden is thought of as being wholly introspective, it is noticeable that many of the existing old gardens in Kyoto are controlled, directly or indirectly, by their topography or by the surrounding scenery. The skilful blending of the garden with its natural environment, in such gardens as Saihoji, Ryoanji, Rokuonji and Jishoji Temples, and of the Shugakuin Imperial Villa, is worthy of study today.

Kyoto is situated in the centre of a shallow basin, and it is very warm in summer and quite cold in winter. Particularly, the summer without a single breeze makes it almost unbearable for the people. In order to relieve this hard condition in summer, a garden-making technique known as *yarimizu* or 'running water' was introduced. This technique was developed progressively during the gardening history of Kyoto. It became an indispensable feature in the layout of a court noble's residence with the style of architecture called *shindenzukuri*, of which a more detailed description will be made later. By means of providing this shallow stream near the house, people sought a cool sensation by hearing the delightful murmuring of the flowing water.

Another way to moderate the summer heat in ancient Kyoto was to build the house and garden near *wakimizu*, the natural spring. Kyoto in early days had many natural springs, and the structure and garden built around the spring was called *izumidono* or else *suikaku*, meaning the spring hall or the water pavilion. Many of them are recorded in Kyoto from the end of the 11th century to the 12th century.

As has been explained, the nature and the climate had intimate relations with the gardens of Kyoto, with ample supply of trees and stones suitable for creative works. The natural sceneries of Kyoto, not grandiose but fine and delicate to be sure, together with the artist's skill in laying out the garden so as to blend the nature with the human art, have greatly affected the development of the Japanese

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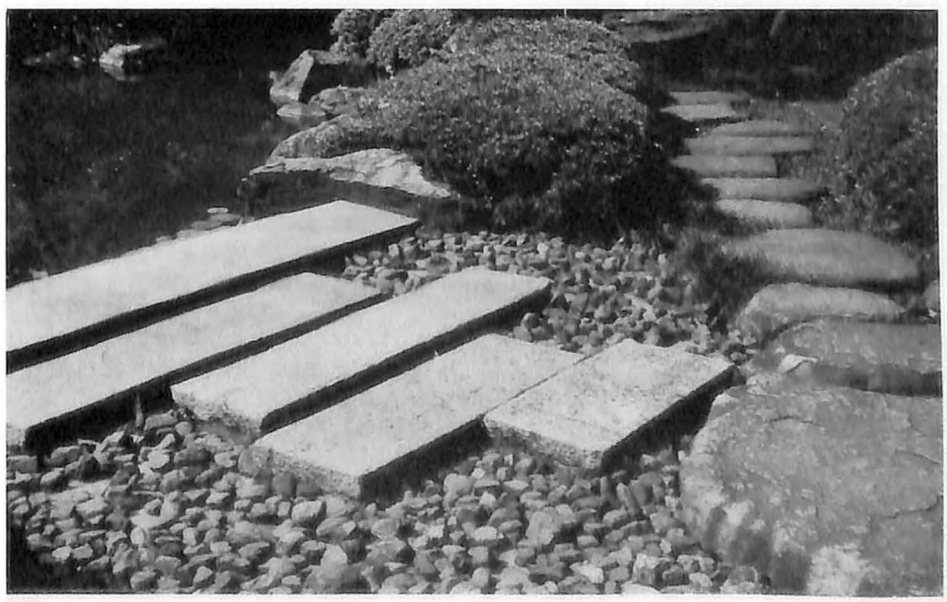

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garden which, as mentioned earlier, started in the attempt to copy the sceneries in nature. And we should not overlook the fact that the practice of refining the garden-making art continued for one thousand years of the history of the capital.

The typical Shindenzukuri layout was made up of the main hall *Shinden* facing the south, flanked by the structure named *tainoya* on both sides, east and west. The two Tainoyas were connected by corridors stretching southward each terminating at *tsuridono* or the angle pavilion which faced the pond. The midway point of each corridor was provided with a gate called *nakamon*. The building arrangement was clearly symmetrical.

The wide garden at the south façade of Shinden was called the Shinden garden, which was covered with white sand. At the south end of this wide garden was a pond with an island, on which artificial hills were built. The island was connected to the shore by a bridge.

Yarimizu or the running water, also mentioned before, flowed from the north to the south, meandering between the east and west Tainoyas, and poured to the pond at near the east side angle pavilion. Inside the pond the water ran from the east to the west, and finally drained off at the southwest corner of the pond.

There was a definite reason for this kind of layout; that was, to conform to the Chinese astrology prevailing at that time called *shijin-setsu* or the Four-gods Principle. The belief was that by conforming to this principle the person living in the house would be assured of his high official rank (Kan-i), good fortune and salary (Fuku-roku), sound health (Mubyo) and longevity (Choju).

The four gods meant the four heavenly directions or spirits. They were, *Seiryu* or the Blue Dragon, the constellation controlling the east, *Byakko* or the White Tiger, the animal-god presiding over the western heaven, *Sujaku* or the Red

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Garden design: Murin-an, the garden of a private house in Kyoto; constructed 1904. The water taken from the central canal of the city flows through several gardens in turn.

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Part of the Sanbo-in temple garden in the Daigo-ji complex of temples, Kyoto; — an elaborate example of the Momoyama period (1573—1615) with one of the largest collections of famous stones.

Sparrow, the southern constellation controlling that direction, and *Gembu* or the Dark Power, the turtle-shaped northern god.

The physiognomy conforming to this Four-gods Principle called for a running stream on the left, that is, at the east side of the building, a long road on the right or the west side, *ochi* or a pool of water on the south façade, and mountains in the northern background. So, in the layout of Shindenzukuri they provided the Yarimizu on the east side, the broad road (Oji) of the capital on the west side, the pond at the south front of the main hall, and let the mountains of Kyoto serve as the northern background.

Shijinsetsu, explained above, was not the only principle. There were many others which influenced the layout and the garden-making, such for example as *Shinsen-setsu* or the theory of the divine fairyland, *Kikkyo* or the principle of good and evil omens, *Ho-i* or the system of aspect divination, *Kinki* or the tabooing, and so forth. Space will not permit for the explanation of each of these theories, but it is important to note that a full understanding of the old Japanese gardens is often difficult without some information about these old theories and principles.

In the history of the Japanese Garden, the occupational position of garden-making was not established until much later years although gardens were being built as early as in the 7th century.

Until the 12th century, gardens were built by various kinds of amateurs. Then what may be termed semi-amateurs in garden-making came into existence. These were mostly Buddhist priests, and were called *ishitateso* or 'stone-erecting' priests. Besides performing their duties as priests, they designed gardens or supervised the garden construction on request. From the end of the 12th century to the 13th century, their activities increased more and more until they became the rulers of the garden-making world later on. Best known of them was the celebrated Zen priest Muso-Kokushi. He was an Ishitateso who was very active in the early part of the 14th century. After this distinguished artist was gone, the activities of Ishitateso dwindled gradually.

As the 15th century dawned, those who ranked at the lowest social stratum, called *kawaramono* (literally 'the river-shore folk'), somehow gained a foothold in the garden-making world, and slowly gained ground until finally they overruled their predecessors, Ishitateso. They came to be known under the name of *senzui-kawaramono* or the landscaping kawaramono.

We cannot deny the fact, however, that Ishitateso, the priest-designers, who had controlled the garden-making world of Japan, designing and executing many gardens for nearly three hundred years from the 12th to the 15th centuries, made a great contribution toward the development of the Japanese garden art. So long as garden-making is a formative art, reflecting, either directly or indirectly, the individuality of the designer, we must admit that the refinement of Japanese garden-making art owes a great deal to these Zen priests, who, belonging to the intellectual class of those days, trained their bodies and souls by means of religion and, with their strong religious faith, transcended worldly cares and troubles.

The interval of 250 years from the middle of the 14th century to the latter part of the 16th century is called the Muromachi Period. It was a very interesting period in the history of Japan. It was a period in which the fine arts and other accomplishments sprang up in new forms, in spite of the succession of civil wars going on at the same time.

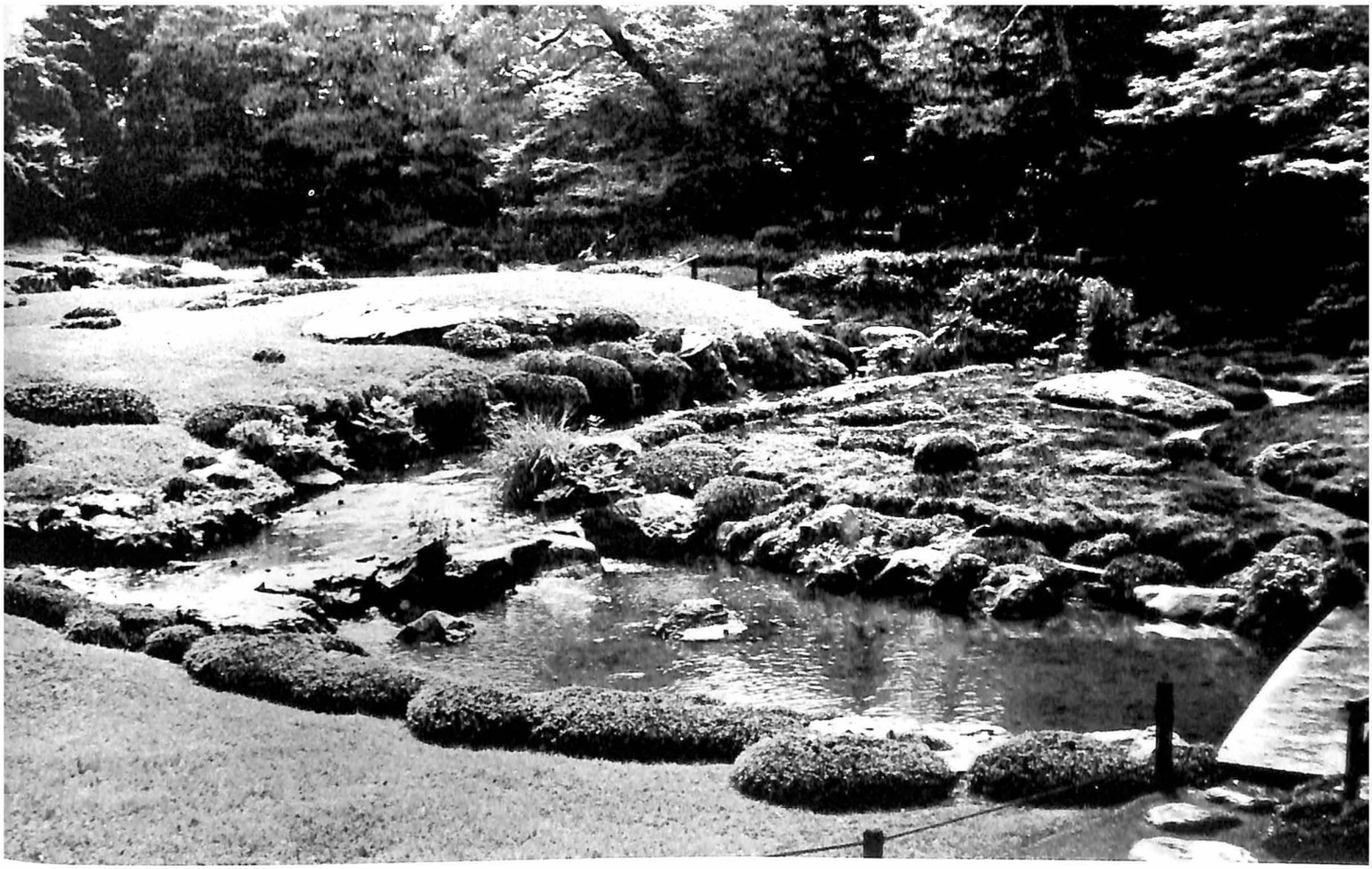
Ironically enough, the fifty years in the middle of the Muromachi Period, when Kyoto was reduced to ashes through the war of Onin, is the Higashiyama Period known for its epoch-making prosperity of arts and crafts. It seems that some causal relations exist between the two apparently contradicting phases, war and art. One reason, probably, was that the deep-felt fears of death drove people into the world of arts and accomplishments and entertainments. These fears, however, could not be relieved by frivolous and sensual arts. Peace of mind was to be found only in higher, more profound, what may be termed supersensible arts, elevated to the stage of religious enlightenment.

The aesthetic idea which people sought from these arts was, to borrow their word, *shiore-no-bi* or the beauty of drooping, of withering. It was the beauty of coldness and desolation. In newer terms, it was the beauty of ageing, and the beauty of *Mu* or 'nothingness'.

During the early part of the Muromachi Period, Kan-ami and his son Ze-ami elevated Sarugaku, which was still a rather vulgar force at that time, into the Noh play of rich artistic value. What Ze-ami sought in the Noh play was *shiore-no-bi* (the beauty of withering) and *oi-no-bi* (the beauty of ageing.) Later, Konparu-Zenchiku and Oto-ami took active part in the world of Noh play and perfected it as a supreme stage art during the Higashiyama Period. Zenchiku pushed one step forward the beauty of withering developed by Ze-ami. He sought the kind of beauty which, having the semblance of external depletion, abounds in the hidden richness, for instance, as a desolate field exposed to the cold wintry blasts has within itself the sign of the approaching spring. And that was the beauty of 'nothingness' (*mu-no-bi*).

Playing the most important role in the painting circles of the Muromachi Period was the Hokuso School of sumie or monochrome painting. Leading painters belonging to this school included Tensho-Shubun, Oguri-Sotan, Kitafusa-Munetsugu, and Soga-Jasoku, all belonging to the Shubun group. In the Ami group were No-ami, his son Gei-ami and grandson So-ami.

Shubun at first learned the painting styles



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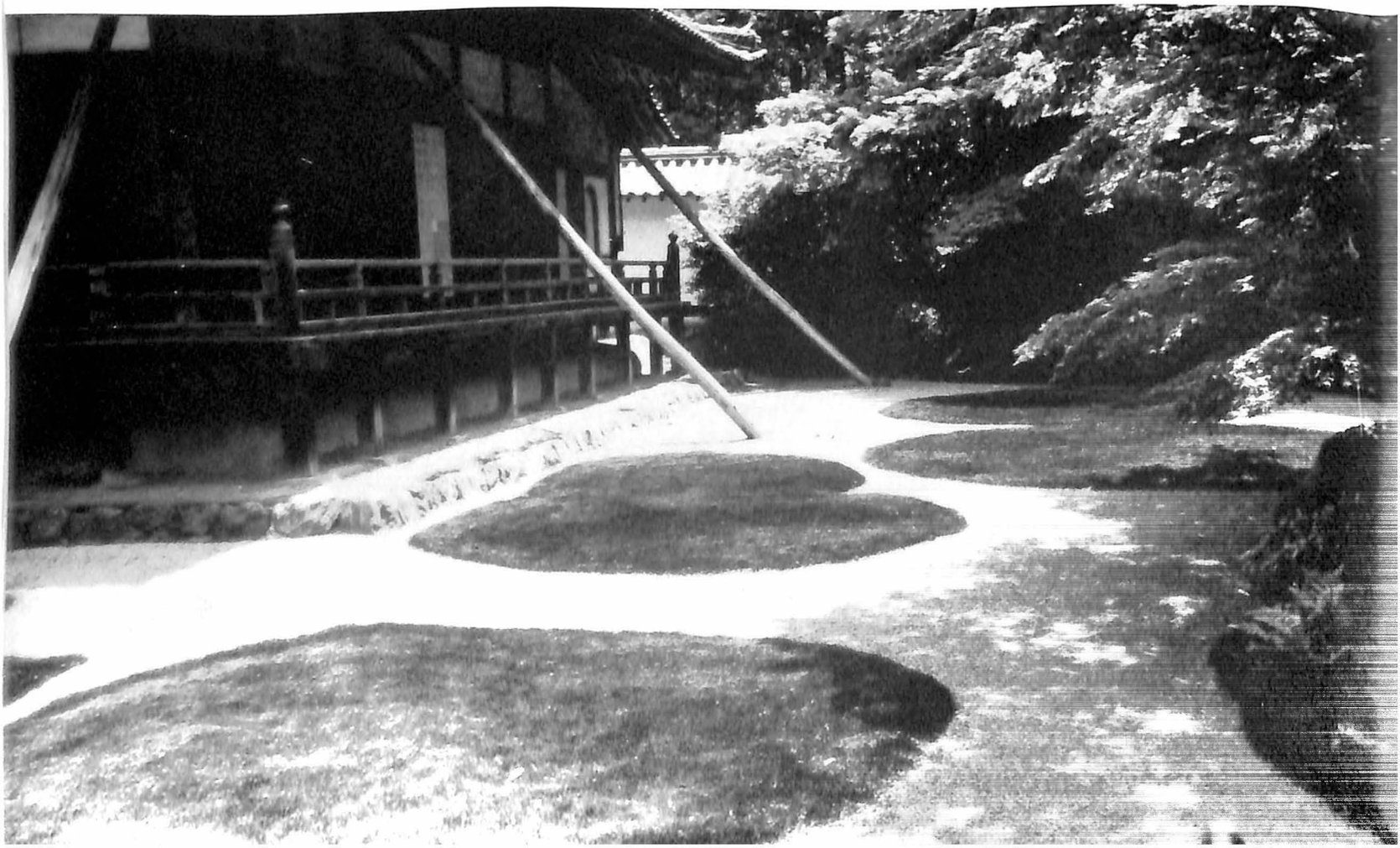

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Tenryu-Ji Temple Kyoto: Garden detail. These are the traditional materials of the historic Japanese garden — rocks, moss, white gravel and pine tree.

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Moss circles at the Sanbo-in Temple garden.

of Chinese masters such as Ba-en (Ma Yuan) and Kakei (Hsia Kuei). Later, however, he gradually developed a unique field of painting based on the feeling for nature of the Zen sect of Buddhism, and established in Japan a leading style of landscape painting. His style of painting was inherited by his disciple Sotan and others to be handed down to posterity, and is known as 'sumie'.

Sumie also belonged to the art of Mu, the nothingness. All colours and planes that actually exist in the universe are denied, and an attempt is made to express the life of nature on the paper by means of black, white and grey and lines only.

Chanoyu or the cult of tea was also established in the Muromachi Period. Tea was originally imported as a medicinal item. Then, from around the 13th century to the mid-15th century, a unique pastime called *tocha* or the tea contest became popular among the people. In this play, tea was classified into two groups. One was Honcha or the real tea produced in the Toga-no-o district, and the other was Hicha or the substandard tea produced in other areas. The contestants tasted various kinds of tea and tried to guess their respective places of production. Gorgeous prizes were offered to the winners, and the game was followed by a merry drinking party.

Tocha was merely a social pastime. In it we can hardly find a single element of that atmosphere we observe later in the tea ceremony. Gradually this Tocha gave way to the so-called Wabicha, and the Higashiyama Period may be considered as a period for such transition.

Depriving the sensual and playful elements of Tocha, and elevating it to the highly spiritual level of Wabicha may be attributed to the influences of the tanka poetry and the Noh play.

The spirit of the tea cult is usually explained by the terms *wabi* and *sabi*. These terms, however, are too abstract for understanding. Masters of the art of the tea ceremony attempted to explain the spirit of tea by way of some tanka poems made by leading poets. For instance, Take-no-Jo-o, a tea master of the time, cited a tanka by the poet Fujiwara-Teika, and said it expressed the spirit of Chanoyu. The poem translates something like the following:

I glanced over the landscape of an autumn eve
No flowers, no tinted foliage, I could spy, —
There stood only a humble cottage
by the sea.

Sen-no-Rikyu, the celebrated tea master, probed more deeply and said that the true spirit of Wabi is expressed by the tanka poem of Fujiwara-no-Ietaka which reads, in effects, as follows:

To one who eagerly waits for the cherries to bloom
I'd like to show this snow-covered grass
In the mountain village — lo! the spring is come.

We have seen a cross section of the Muromachi Period, with reference to the Noh play, the painting and the tea cult, and have found that the spirit throughout the period, or the aesthetic idea of the period, was manifest by the term Mu or nothingness, and Oi or the ageing. Fine arts and other accomplishments could not have escaped from the influence of the spirit of the period; certainly not the art of gardenmaking. This spirit would certainly have given rise to some special ideas in garden design and its individual forms and expressions.

Buddhism and the Japanese garden began to show their relationship as early as the 7th century, but it was during the Muromachi Period that Buddhism had a strong influence on garden-making. In particular, the feeling for nature of the Zen sect of Buddhism had tremendous influence in making the forms and expressions of the Japanese garden highly abstract.

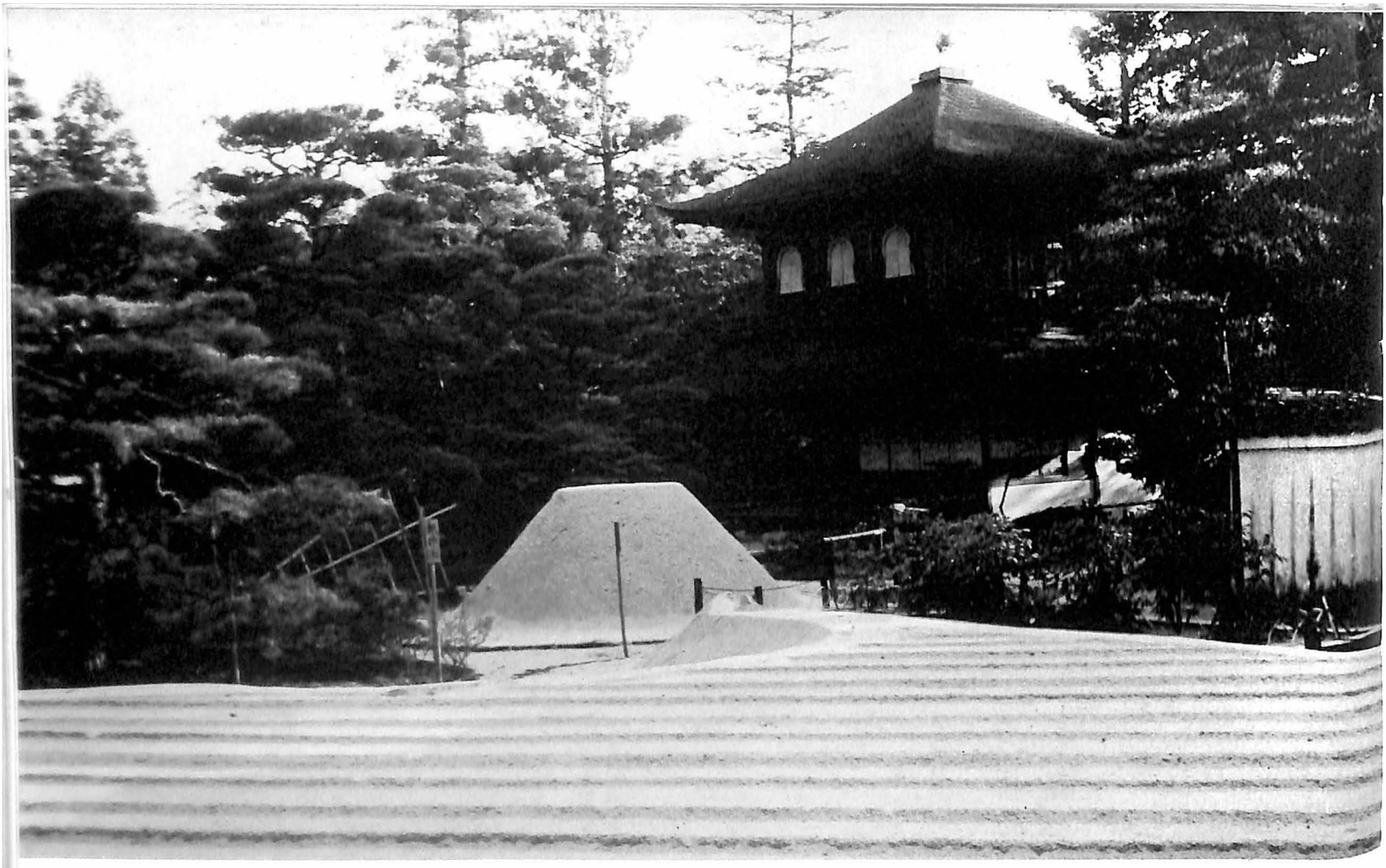
Zen Buddhism was first introduced from China into Japan toward the end of the 12th century. It became very popular during the Muromachi Period penetrating deeply into the spiritual life of the cultured people of the time, including the samurai warriors and court nobles. As Zen priests came to control the academic circles in Japan and finally to lead the entire Japanese culture, Zen's feeling of nature fused into the life of the Japanese people in many ways.

According to the conception of Zen, everything that exists in this universe, or every phenomenon in this universe, is a way leading to Buddhism. It is also believed that all things in nature form one gigantic Mandala, embodying the real state of Paradise.

There is a poem composed by a famed Chinese poet Sotoba (Su Tong-po), saying 'Is not the murmuring of a mountain stream the perpetual preaching? Is not the form of a mountain the sign of divine purity?' Zen priests of the Muromachi Period were quite fond of reciting this poem, probably not so much for its being a beautiful poem as for the meaning of the poem being the basic idea of Zen toward nature.

For Zen priests, the wind whistling over the tops of pine trees, the roaring of a waterfall or the murmuring of a mountain stream - - all sound like the preaching words of Buddha. To them the natural forms of mountains and rocks were the very image of Buddha. It was because of the infiltration of this idea of Zen into the minds of the garden-makers of the Muromachi Period that the forms and expressions of their works were made so highly abstract. All the excellent gardens built in this period show the influence of this Zen philosophy.

There are several special characteristics to be noted in the garden design of this Muromachi Period. Among them, the garden construction which directly symbolized the spirit of the time and the attitude of Zen toward nature was *ishigumi* or the stone arrangement or grouping. Special characteristics of the garden of the



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period, as forms, were *koniwa* (the small garden), *sekitei* (the stone garden) and *karasenzui* (or Karesansui), the dry landscape.

In order for the garden to be built to express the idea of 'the beauty of nothingness' and 'the beauty of ageing', garden stones had to be given the highest priority among the various materials for construction. Garden trees are rich in colour and intricate in form, whereas garden stones are rustic in form and colour, having the right withered quality. Stones, when exposed to the sun and air for numbers of years, acquire a dull, faint and rusticated tone called *sabi*. Such stones serve as the most fitting material for garden-making in order to present the beauty of drooping and withering (*shiore-no-bi*) and the beauty of coldness and desolation (*hie-kareru-bi*). Thus the use of garden stones became more and more prevalent which, in turn, helped the development of the art of stone arrangement until it came to play the most important role in the composition and expression of the Japanese garden.

For Zen priests, the garden was not a mere object of appreciation. For them the garden was also a place where they invited Buddha, and listened to his preachings. By them the garden was looked upon as one Mandala, and the garden stones were considered as representing Buddhistic saints. For example, there is an arrangement called Sanzonseki which represents the Buddhistic trinity. In this arrangement, three erect stones are placed together in such a way that the top of the central stone comes higher than those on the right and left. The central stone symbolizes Skaha or the Buddha, the other two representing Bodhisattvas Monju and Fugen.

There are also many other names of garden stones originating from those of Buddhist saints. Kannon (Avalokitesvara), Fudo (Acala) and Rakan (Arahan) are some of them. These garden stones are mostly natural erect-form stones. This

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The sand garden of the Ginkaku-Ji (Silver Pavilion), Kyoto 1489, in which the main features are a sand 'mountain', and a raked sand platform representing water. Believed to symbolize Lake Saiko in China. One of the best preserved examples of the Muromachi period.

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A modern Zen garden completed in 1961: the Zuiho-in Temple.

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The Japanese excel at the small domestic garden — even in a space only three feet wide.

accounts for the presence of so many erect stones in the gardens built in this period. There were several large gardens in the Muromachi Period, such as the gardens of Saihoji, Rokuonji and Jishoji Temples. However, large-scale gardens were not typical gardens of this period. On the contrary, small gardens are considered to be representative of the period. Small in size, but these were superb works of art. These small gardens could come into being only after the negative criticism of the colourful, flamboyant large gardens of the past such as those built in the Heian Period. Had the Muromachi Period been preceded only by small gardens, it would have been quite impossible to see the development of these small gardens of supersensible beauty.

Sekitei is completely controlled by garden stones. The size of the stones that can be used in the garden is naturally limited, considering the difficulties of transportation. In order, therefore, for these gardens to be dominated completely by the stones, they had to be small in area. If the garden were large in area, it would be impossible to let garden stones dominate the entire garden view, no matter how numerous and how large the size of stones. In a garden having a pond, stream, lake, waterfall, and such features, the garden view is a blending of the garden stones with the other features. This is not the stone garden. The stone garden is produced, after all, by giving the whole emphasis to the stone arrangement.

A highly symbolic and abstract form and expression of the garden-making art evolved during the Muromachi Period, under the influence of the idealism of Zen toward nature, and *Karasenzui* was the ultimate expression of this. Karasenzui was a form of design in which water was abstractly represented by using materials other than water. It is universal practice, of course, to use water in making a stream, waterfall or other water feature in a garden. In the Karasenzui style, in order

ROKURO TAJI

Landscape design in modern Japanese gardens

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to symbolize a cascade in the garden, erect stones are used, and to represent the surface of water the garden is covered with white sand. It is an abstract method, indeed.

Since the nature of water is entirely different from that of solid materials, it is impossible to express the qualitative sense of water by means of stones and sand. Nor is it the aim of the Karasenzui garden to do so. Without having recourse to water, this garden is designed to express the essence of water even more deeply than the actual use of water would accomplish. Looking at the stones, the viewer would almost hear the incessant flow of water making a roaring sound, and even feel the cool spray of water touching his body. The mountain stream represented by white sand is actually motionless, yet one appears to hear the murmuring of the stream there. These were the intentions of the designer of the Karasenzui garden. It is very interesting to note that abstractionism, which is now a prevailing trend among the modern art circles of the world, was actually practiced in the Japanese garden as early as in the 15th and 16th centuries.

The 'Kara' of Karasenzui means China. This style of garden-making was presumably introduced from China by Zen priests who dominated the cultural world of Japan at that time. It is believed, however, that that which was brought from China was merely the idea of ignoring the use of water in gardens, so that the concept of representing a waterfall only by arranging stones, and a stream by the use of white sand, solely originated in the aesthetic sense of the Japanese people. The same practices can not be found in any Chinese gardens. Thus, from the viewpoint of formative art, the Muromachi Period is regarded as the golden age.

During the 17th and 18th centuries, gardens gradually became popular among the common people along with the improvement in their social and economic states. As the result, more gardens were built during this interval than in any other centuries. However, many of these gardens lost gradually their artistic values. There may have been many causes for such deterioration. Principal among them was the fact that people's feeling for nature was disconnected from the religious faith, and a garden became a mere decoration for living. Another cause of this artistic deterioration in garden design was the fact that abstractness was once more replaced by concreteness and realism, and garden-making began to be influenced by conventions and rules.

However, the appearance of *Daimyo-niwa* was a notable feature of those times. Large gardens in this style were built in Edo and other castle towns by feudal lords. While in the past the house structures had constituted the principal part, and the gardens were subordinate, in the Daimyo-niwa the roles were reversed. Although their artistic values were not high, they were largely built in urban areas, and met many of the conditions required for modern parks. Many of these gardens are, therefore being used as parks today.

The drastic political reform carried out in the latter part of the 19th century destroyed the feudalistic system and thought, giving rise to moves to stamp out anything that symbolized feudalism. Thus a check was made, even if only temporarily, to the continuous development of the tradition of the Japanese garden.

As seen from the foregoing descriptions of its history, the most outstanding characteristics of the Japanese garden are its changeability and abstractness. These characteristics are most prominent in the gardens built around the 15th and the 16th centuries.

Through the centuries the Japanese have created a distinct culture of their own by eagerly borrowing from China; by imbibing Chinese cultures and assimilating them. One of the outstanding achievements of this national culture is the peculiarly Japanese style of garden design — exemplified particularly by the gardens of Zen Buddhism in Kyoto. These gardens can be appreciated as great works of art and as such they require a deep understanding of the tenets of Zen Buddhism and the living pattern and disciplines of Zen priests.

Gardens designed for aristocrats differ sharply in taste and style from those for average citizens, even if they happened to have been built in the same period. For this sort of reason, historic gardens which have great artistic value and express the spirit of the Orient cannot be utilized today in times which are marked by drastic changes in living patterns; nor is it relevant to attempt to do so. It is also almost meaningless to copy them in foreign countries though they may offer interesting new ideas for garden design.

In modern times, particularly after the Meiji Restoration, Japan came under strong European and American influence and after a century of this influence it is in process of assimilating Western culture. Garden design has come under these same influences. In recent decades, a number of gardens copying Western-style gardens have been made. Various experiments have also been made by blending Western and Japanese styles and some of them have produced outstanding gardens. Yet, it is regrettable that 'new Japanese gardens' comparable to those of the old era are still few and far between.

It is true that gardens of epoch-making value and significance are often the works of men of genius, but they seldom appear suddenly independent of their surroundings but rather they come from a fertile ground conducive to their appearance. Of course, it is hard to spell out the various factors of a society which make for the appearance of men of genius, but it is imperative that we should strive to raise our technical standard through an accumulation of efforts.

This chapter is a comment on four gardens with which the author has been directly connected or which have impressed him particularly as an introduction to some aspects of the work of Japanese garden designers in their groping search for a new design-vocabulary.

Two of the four examples belong to municipal establishments constructed for conferences and meetings and the remaining two to hotels. They are not intended as gardens for the general public like parks, nor are they completely closed as private gardens. They are gardens that are used by a limited and narrow circle of people; furthermore, they are used infrequently and for short periods only.

For this reason the characteristics of these gardens are reflected in their contents; they are designed in such a form that they leave upon the users strong impressions in a short span of time, i.e. they tend to be highly decorative.

Many gardens of this type are attached to architecture of Japanese style, but these comments are confined to a few examples which are attached to architecture of Western styles, on the assumption that Western-style architecture will be found in increasing numbers in the years to come and that gardens designed for them, whether they be Western or Japanese in style, will have an important influence on future Japanese gardens.

GARDEN OF SAN-AI HOTEL, SAPPORO:
(Photograph 161 and 162.)
(Gardening Faculty of Hokkaido University and the Park Service Department of the Sapporo Municipal Office.)

In designing the garden, emphasis was placed on incorporating the landscape of the northern island into it, with the following specific conditions:

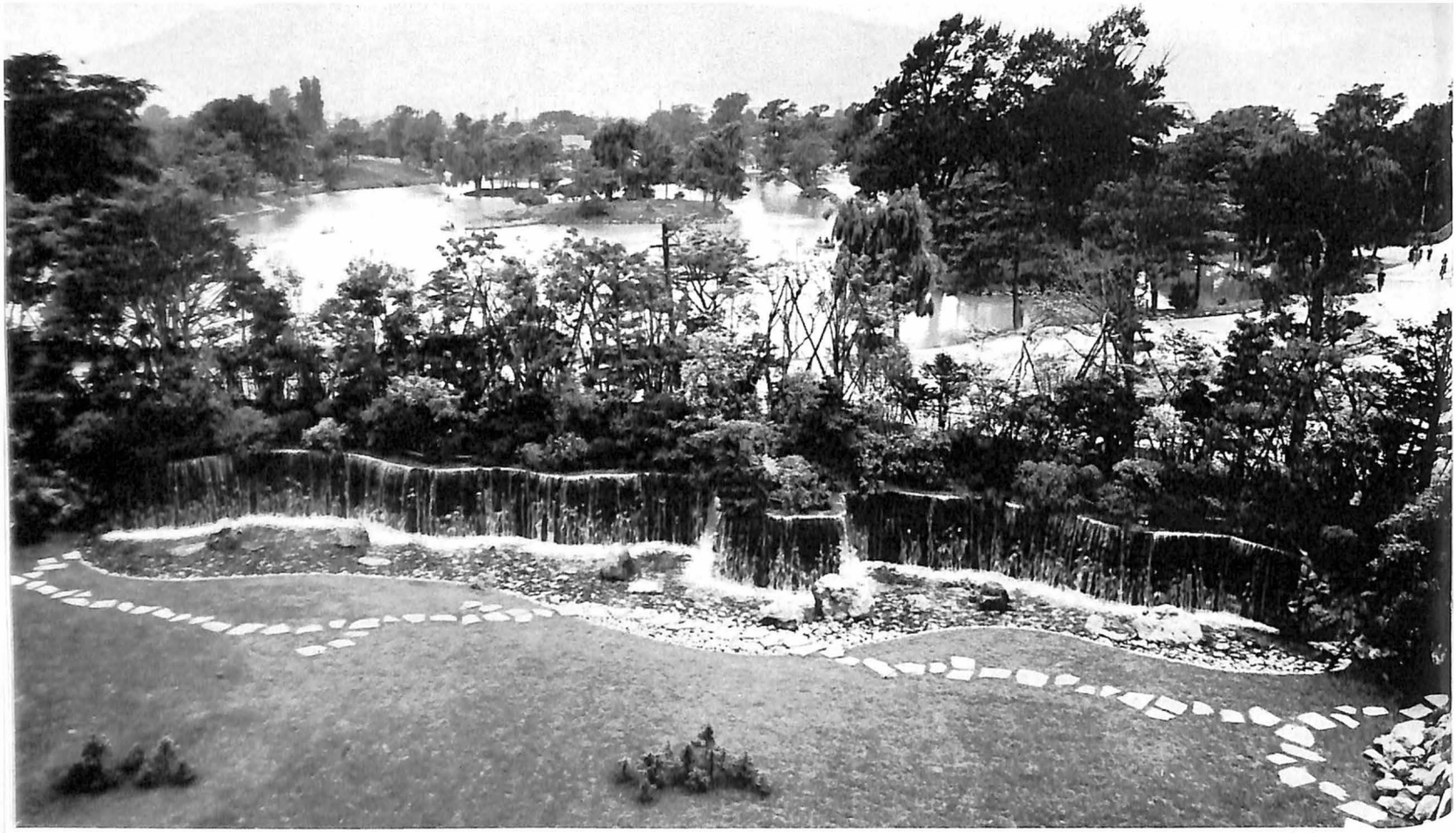
1 Plants, rocks and other materials should be those obtainable in Hokkaido.
2 A large-scale waterfall should be a key factor of the garden.
3 A rock garden should be set up for the planting of flowers and trees of the frigid or semi-frigid zone.
4 Minute care should be given to details but the overall execution should be marked by a bold expression.

The garden is executed with a boldness without precedent in Japanese gardens and is bound to capture the attention of everyone who steps into the hall. In this respect, the garden is relevant in its composition and fully serves the purposes for which it was designed. However, careful and detailed observation may leave a sense of instability in the mind. There may be many reasons for this feeling, but a major one is in the imbalance created by the waterfall, (the key theme of the garden), and its surrounding elements, e.g.: the structure of the rock formation at the western end of the fall appears weaker than that of the fall itself. Furthermore, rocks used in the fall are much too diverse in quality. The appearance of the grove of trees which provides a backdrop for the waterfall is rather too involved and artificial. The shape of the fall and the rock garden are out of balance in shape and proportion.

Despite these points which call for closer study, the general composition of the garden, particularly the waterfall, is impressively bold, and represents the bold and dynamic expression of the younger generation of garden designers. The garden has, in fact, injected a new element into Japanese gardens which are too often characterized by emphasis on detailed and fine techniques.

ROOF GARDEN OF SENDAI HOTEL, SENDAI:
(Photograph 163.)

The garden, which is quite small, is located on the roof of the third-floor, and faces a



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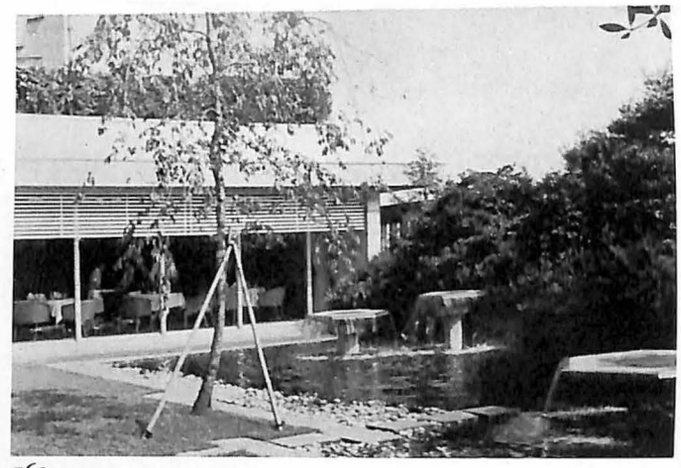
161, 162
San-Ai Hotel
163
Sendai Hotel



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restaurant on its two sides. The layout is simple, consisting mainly of a rectangular pond with two sides on the far edge being made up of banks of natural rocks. The broadleaved, evergreen trees of a low height and of several varieties on the pond's edge serve as a backdrop and at the same time hide from view unattractive structures along the streets below the hotel. The pond and the restaurant are separated by a patch of lawn which is dotted with rectangular stepping-stones for visitors to walk on and enjoy a changing view.

An interesting feature of the pond are the five fountains, each of hexagonal shape, and which vary in height. The fountains permit visitors to enjoy the soothing murmuring of falling water and they are illuminated at night.

The shape of the pond and fountains is not typical of Japanese gardens, yet as a whole the garden retains a Japanese touch thanks to the fine taste displayed in the varying height of the fountains and their arrangement. The excellent treatment of new and heterogeneous materials is an outstanding feature of the garden and represents a step forward in the development of new Japanese-style gardens.

GARDEN IN MAYOR'S MANSION, OSAKA: (Photograph 164 and 165.)

The Mayor's Mansion was built for the mayor to receive important guests and for the holding of small-scale gatherings. The architects and designers were required to provide a separate tea ceremony room and as broad a lawn as possible, but all the remaining specifications were left to their discretion.

The main building was designed in Western style, and it would have been quite reasonable for the designer to lay out a Western-style garden to meet the requirements of the structure and the shape. But the author chose to design a garden in which the best tradition of Japanese gardens would be harmoniously blended with heterogeneous buildings. In this design particular attention was paid to the following points:

1 In the belief that water would serve as a link between the garden and the 'non-Japanese' building, the garden arrangement was made in this order: main structures, pond, patches of small bushes and lawn; instead of in the traditional order of: main structures, lawn, pond and mound.
2 To draw a sharp line between the pond and lawn a zone of small bushes was provided, which, at the same time, minimized the sense of strangeness which was bound to be created by the direct contact of the rocks with the pond and the lawn.
3 The stone wall of the terrace facing the pond to be primarily a straight-line edge of stones, with natural stones used in the area where pine trees of graceful shapes would be planted.
4 Many trees in a formal arrangement, to be planted close to the main structures while trees retaining natural form and pattern would be spaced further away.
5 The location and direction of the main building to be determined so as to make the most of the surrounding view — trees of nearby gardens and the riverside park in front, etc.
6 The tea ceremony room to be the key factor of the overall layout of the garden and it should be given shape and location within this framework.

The garden as designed and executed with these points in mind has met with approval and it has been felt that it achieved the purposes for which it had been built. Criticism has been expressed, however, about the siting and form of the main buildings and their relationship to the garden layout.

GARDEN OF OSAKA MUNICIPAL WOMEN'S HALL, OSAKA: (Photograph 166)

The designer of this garden was confronted with two major problems. One was how to hide from view the rather shabby structures in front, and the other was how to make the available land look as broad as possible.

The first problem could have been settled by planting tall trees or by raising the ground-level, with recourse to mounds, but these easy solutions were abandoned because it was not a good season to transplant large trees and because large mounds would have made the narrow space look even narrower.

The method employed was to elevate the ground-level by building a straight-line retaining wall along the boundary and planting trees on the wall. The wall and trees do not completely hide the structures in front from view, yet they do convey the clear intention of the designer. From this approach, it was only natural that the designer should have conceived of a garden with straight lines as its key note, but it took him considerable time to decide on the conception of a scalene triangle.

As the basis of this conception, trees of rather regular form were planted along the boundary. They included 'Juniperus chinensis L. var. kaizuka Hort.' and 'Ternstroemia japonica Thunb.'

Also planted were trees from tropical climates which are rather rarely used in ordinary gardens in Japan: 'Phoenix canariensis chabaud,' 'Cordyline australis Hooker', 'Agave americana var. marginata Trel', 'Yucca Aloifolia f. marginata Bommer L.', and 'Cordyline indivisa Kunth'.

In both shape and materials used, the garden is more a Western-style garden than a Japanese-style one. If anyone asks where he can find Japanese elements in the garden, the author can only say that it was the work of a Japanese garden designer bent on creating new Japanese-style gardens.

Interest shown in the garden may stem from the novelty of its shape, the beauty created by meticulous care and management, and the lack of such gardens in

164, 165
Osaka Mayor's Mansion
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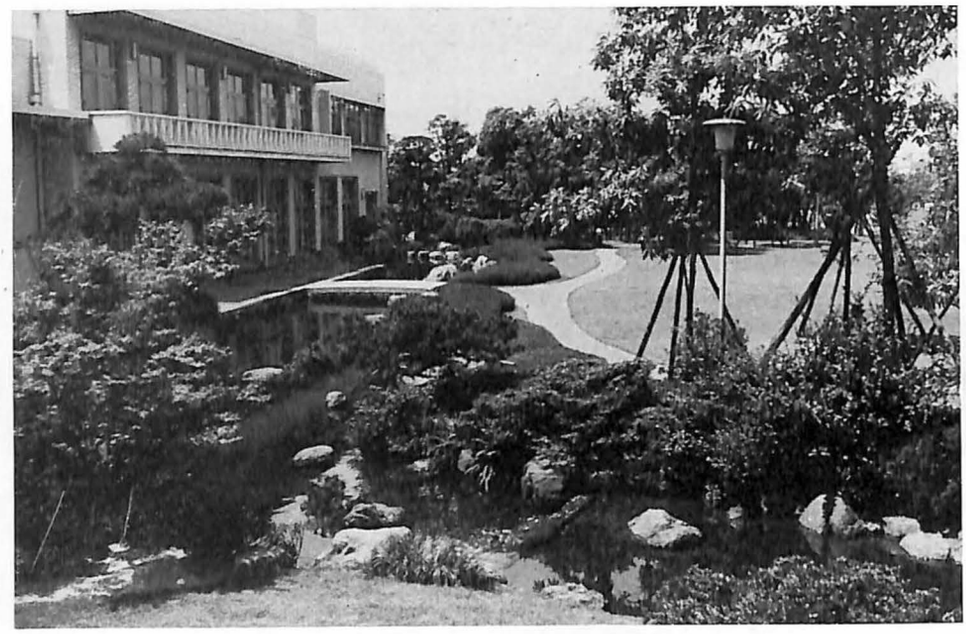
Osaka Municipal Women's Hall

similar establishments, rather than from perceptive appraisal of the design. The thought-provoking question has been asked: 'Whether Japanese-style gardens and Western-style structures, which are so vastly different in tradition, style and function, can attain harmony.' The author replied to the effect that, whether good or bad, the Japanese have lived and will be forced to live, in future, a life which is a mixture or compromise of Japanese and Western styles and that under these circumstances they can only do their best. An example may illustrate this point. A photograph of a white-walled church with a spire and red brick walls against the background of snow-covered peaks of the Alps and a lake of deep blue has been made familiar to the Japanese and they consider it as a classic example of the harmony between nature and man's workmanship. But should structures of that shape and colour be the *only* ones that can be allowed to exist in this natural surrounding? How would the scene be considered if an elaborate Japanese Buddhist tower or a simple hut or watermill were placed in the focal position? Nature is capable of accepting all things in its warm embrace, but not without conditions. What makes artifacts acceptable to nature is the intelligence of man, his understanding of, and love for nature.



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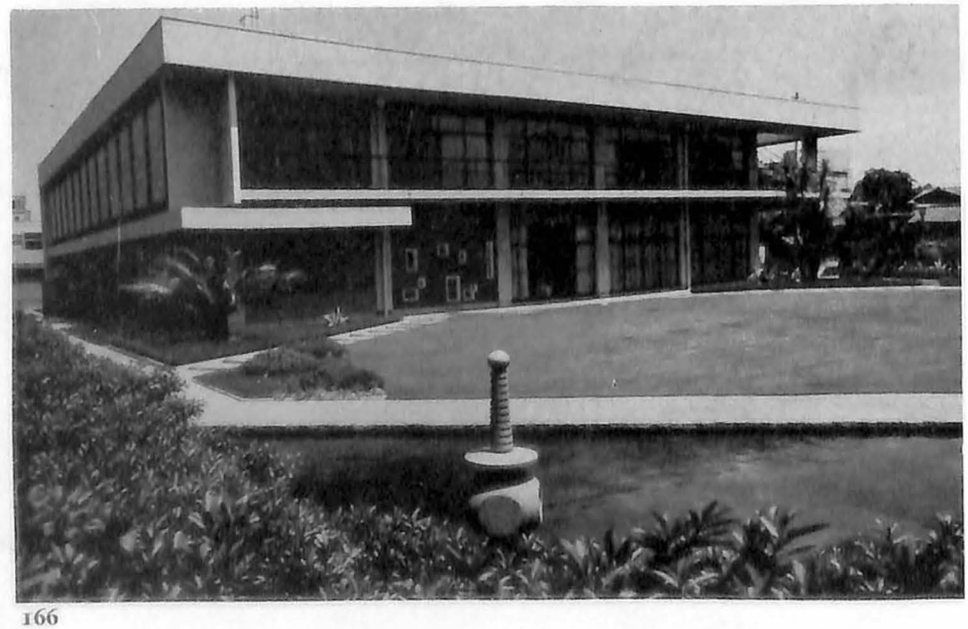

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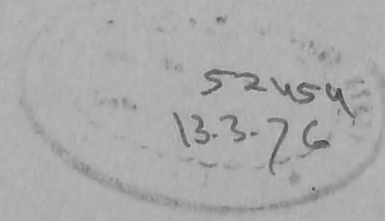

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A cock and a rose appear in the coat of arms of Jesus College, Cambridge. They were taken as the emblem of I.F.L.A. to mark its foundation there in the summer of 1948. The rose symbolizes man's historic love for a garden. The cock announces the dawn of a new landscape age.

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