

Handwritten notes or signatures, possibly including the name "Akashi".



A COMMUNITY CENTER FOR ICHIKAWA

Submitted in partial fulfillment
of the requirements for the degree
of Master in Architecture at The
Massachusetts Institute of Technology.

August 6, 1957

Naibu Akashi

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216 Beacon Street
Boston, Massachusetts
August 6, 1957

Dean Pietro Belluschi
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Dear Dean Belluschi:

In partial fulfillment of the requirements for the degree of Master in Architecture, I submit the following thesis entitled "A Community Center for Ichikawa."

Sincerely yours,

Naibu Akashi

To Dean Pietro Belluschi for his
inspiration and warm-hearted
support of my efforts.

To my father, for his patience,
encouragement, and help

TABLE OF CONTENTS

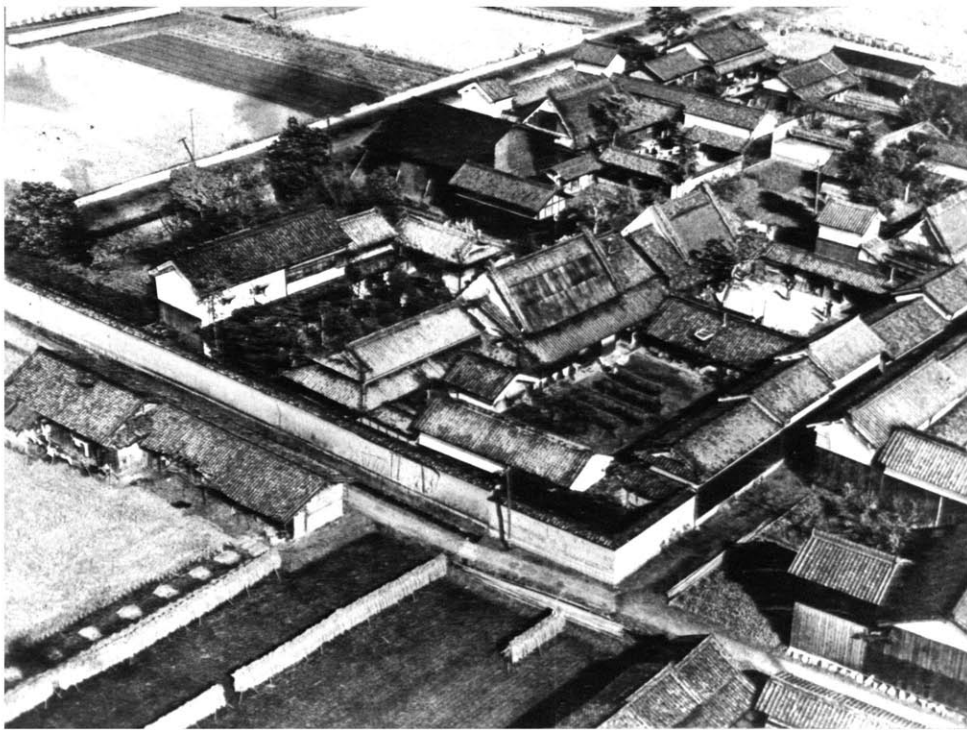
	Page
INTRODUCTION AND BACKGROUND	
Historical	1
Western European Influence	2
Movement toward Environs	3
TOWN PLANNING IN JAPAN	
General Statement	4
Street Traffic	6
Parks	7
Water Supply	8
Sewerage	9
Development of Government Office Center	9
Zoning	10
Fire-Proof Belt	12
War-Damage Reconstruction Works	12
Urban Disasters	13
Land Replotting	13
Improvement of Greater National Capital District	14
Large Scale Development of Building Lots	15
THE HOUSING ACT IN JAPAN	
Housing Situation	15
Public-Operated Housing	18
HLC Housing	24
Japan Housing Corporation Housing	25

TABLE OF CONTENTS (Cont'd)

	Page
Housing Built by Japan Housing Corporation	26
Development of Building Sites by the Housing Corporation	28
ICHIKAWA, CHIBA	30
Climate	30
Rainfall and Wind	30
Population	32
Economy	32
Education	35
Community Facilities	36
Religion	37
Traffic	37
COMMUNITY PLAN FOR MIYAKUBO, ICHIKAWA	39
The Site	39
Topography	40
Organization of the Plan	40
Residential Density and Scale	41
Structure of the Community Unit	42
Other Recreational Grounds	43
The Neighborhood	43
The Community	43
Circulation	44
Residential Program	44
Community Facilities	46
Building Requirements and Plan	49

TABLE OF CONTENTS (Cont'd)

	Page
DESIGN PROGRAM	51
Community Building	51
Auditorium	52
Administration	53
District Ward Office	53
Fire Station	53
Shopping Area Center	54
DESIGN ANALYSIS	55
Plot Plan	55
Building Plan	55
1. The Auditorium	55
2. The Community Building	56
3. The Group of Shops	56
Structure, Elevation and Material	57
GOAL	58
BIBLIOGRAPHY	59



Introduction

A COMMUNITY CENTER FOR ICHIKAWA

I. INTRODUCTION

As a bubble suddenly appears in the rain and as quickly vanishes away, so people are born and leave this world. Short and fleeting is their life, but until the moment that it passes away, they must find living space, whether rich or poor. In big cities the countless roofs that meet our gaze and the myriads of bright lights at night represent the endless sequence of labor and recreation as humanity spends its allotted time. Day after day, year after year, dissatisfied with the existing conditions, mankind is seeking better ways of living.

Our ancestors emerged from caves to build shelters in trees; log cabins over water and on the ground. The first living spaces came into existence, although the history of collective life extends much farther back. As the wisdom of the people grew and conformity to public morals and customs increased, the community became more and more orderly. However, the Orient and the Occident went their separate ways for thousands of years and created their own unique mode of life without an interchange of civilizations.

Tradition and convention are deeply rooted and cannot be ignored even though the social system has been transformed by the industrial revolution. Man's roots in the past are firmly implanted and sentiment and custom play a prominent part in the transition.

Japanese civilization in these times is a compromise of oriental and occidental elements still in a state of flux. About a hundred years ago, when Western European civilization was introduced, there was no objection

then to adopting public measures changing the mode of government, the army, or education. As the feudal economy changed to capitalism with the progress of productive labor, Western European influence spread fast and extensively. However, when this culture invaded their private lives, tradition became an obstacle to a complete adoption of such phases as that of architecture.

The extent of the disruption is most noticeable in their home life. Imported innovations were first adopted by the upper class and then by the masses. The result has been a confusion in design and function as the people sought a way to reconcile their former way of living with western ways. For example, there is a combination of style in one dwelling--a room, occidental in content, with chairs, in contrast to the usual matting (tatami) where one may sit on the floor; and the use of the fragile sliding paper screen in combination with reinforced concrete.

It is my purpose to bring these many elements together in such a way as to respect the Japanese personality with its complex threads of tradition and custom and by utilizing the portion of western design which will best suit the people's temperament, produce a community center which will appeal to their sense of comfort and enjoyment. My effort will always be to try to "humanize" design in all its aspects.

Let me here give a background of the project I wish to present. Tokyo, the heart of Japan, has often had painful experiences such as the big earthquake in 1923 and the destruction brought by World War II. Despite these and many earlier catastrophes, she has always been reborn to go on again.

Six hundred fifty thousand families dwell in this congested and confused area, having little to do with each other; alike, yet different. The one thing they have in common is a grey loneliness that stems from a lack

of good neighborhood spirit. Therefore, to satisfy their requirements and to assure their wholesome development in both the city and its environs, we should look not only toward the cultivation of better planning of the environs but eventually a reorganization of the central district.

Because of the overcrowding of the central district the outlying green space has been rapidly built up into residential areas. These beautiful green spaces can ill be spared and their loss is a constant threat to the ever increasing number of mouths that cannot be fed through the lack of agricultural lands. We can no longer ignore its implication and we must take a realistic view in improving our present community facilities.

As one approach, I have taken a community plan in Ichikawa which lies east of Tokyo. Tokyo, with its ten million people now boiling out into the environs where noise and quiet live side by side and modern science brings with its many benefits a breaking up of the old way of life, grew in a radiated and circular shape, resembling in some aspects the skeleton of a fish. Many small towns have developed along the traffic line of this radial form, leaving many green spaces between the radial line and the town area. Such a one is Ichikawa.

I propose to build there a community center which will provide shopping and recreational facilities, an auditorium, a small hospital, and a junior high school. The center will retain the best customs and traditions inherent in their daily life and incorporate them into the present way of living with its modern scientific techniques.

To assist the reader to get a comprehensive view of the developments in housing legislation I am inserting in Section II and Section III* the efforts made thus far.

*Housing and Town Planning in Japan, Ministry of Construction, Japan Housing Corporation, Housing Loan Corporation, Tokyo, 1956.



Town Planning In Japan

II. TOWN PLANNING IN JAPAN

A. General Statement

According to the census taken in October 1955, Japan's population is 89,270,000, which is an increase of about 30,000,000 as compared with that in 1925 thirty years before. The greater part of the increase population concentrated in cities and the urban population became nearly four times what it was in 1925. (Table below). Because of this marked tendency of the population to concentrate in cities, the construction of urban facilities such as roads, parks, water supply and sewerage works, transport facilities and up-to-date housing, which are the requirements of modern cities, has failed to keep pace with the growth. The great damage caused by the last war has further added to the delay.

Increase in Population (Unit: 10,000 persons)

Year	1920	1930	1940	1945	1950	1955
Population						
Urban Population	1,002	1,536	2,749	2,002	3,120	5,280
Rural Population	4,537	4,851	4,505	5,198	5,200	3,899
Population of Japan	5,539	6,387	7,254	7,200	8,320	8,927

The City Planning Law, which is the basic legislation for town planning in Japan, is applicable to 1,148 cities at the present time. Plans to modernize these cities have been determined by the Minister of Construction and works are being carried out on the basis of these plans, but large amounts of funds being needed for other enterprises such as rehabilitation and prevention of damage due to typhoons which strike the country every year and for agricultural improvement works

to ensure food supply, the funds available for town planning works amount to only 3.5 per cent of the total public works expenses.

In view of these circumstances, the Minister of Construction has set up a series of overall work programs, each covering a period of five years, with the twofold aim of promoting the execution of town planning works and of performing them most effectively. The principal objectives of the 1st Five Year Program starting in 1956 are as follows; to promote prompt improvement of transport facilities to meet the sharp increase in the volume of traffic and the increasing size of vehicles; to plan for extensive development of building sites to facilitate implementation of housing measures; to promote improvement of mining and manufacturing districts; to proceed with greater area town planning to establish close connection between the cities, the largest of such plans being the one for the greater national capital district with Metropolitan Tokyo as the nucleus.

According to the provisions of the City Planning Law, the total expenses required for town planning works are borne by the local public bodies which execute the works, although in some cases the national government gives a subsidy to cover part of the expenses (about 50 per cent). On the other hand, these local public bodies are in financial straits, making it necessary for them to adopt some financial measure in order to carry out more town planning works. This has led to the establishment of the town planning tax, to be levied in 1956. The tax will be collected by cities, towns, or villages from the owners of the land or buildings within the town planning areas, according to

the appraised value of the land or buildings. It is expected that approximately 3,000,000,000 yen (8,400,000 dollars) will be collected in 1956 for use in town planning works.

So much for a general description of the town planning works in Japan. Outlines of the works now under execution are given below.

B. Street Traffic

(1) Increase in Number of Motor-Vehicles and Traffic Congestion

The number of motor-vehicles in Japan increased sharply after the war. In 1938 there were only 220,000 registered motor-vehicles throughout Japan (1 car for 320 persons). On 1955, the number increased six-fold to 1,370,000 (1 car for 66 persons), 41% of which concentrating in the six major cities.

This increase in the number of motor-vehicles has brought about traffic congestion in the large cities. The arterial roads in Tokyo, Osaka and other large cities have reached the limit of their capacity to accommodate traffic.

Especially, at some crossings, the stopping cars cannot pass in one signal cycle—or so called stagnation occurs. In Tokyo, stagnation is seen at crossings with a traffic volume of 20,000 vehicles in 12 hours, and the number of such crossings is increasing.

In the central part of Tokyo the number of vehicles parked on the roadside is increasing in proportion to the increase in the number of vehicles. To meet this situation it is necessary to establish a system of charging a fee for parking and to build parking spaces on land other

than the road.

For some large cities such as Tokyo and Osaka, expressways are being planned. In Tokyo the works have partly been started.

(2) Streets of Small or Medium Sized Cities

A few years ago a law was enacted providing that the gasoline tax should be used for road improvement works. Since then the national and prefectural roads have been improved in the parts outside the urban areas, but in cities most of them are still narrow and winding. With the object of improving urban roads, a plan to construct town planning streets for about 22,000 km has been decided and about 15.7 per cent of the works have already been completed. However, it will take dozens of years to complete the whole program.

C. Parks

The Japanese parks devastated during the war years have been rehabilitated. New parks were constructed when land was replotted for war rehabilitation and some former military and other State-owned land were included in the sites for parks. The number and area of parks as of March 1955 were as follows:

No. of cities having parks	Total no. of parks	Total park area
668	4,479	44,826,610 tsubo

(1 tsubo = 1/3,000 ha) = 38.58 sq. ft.

Although these figures exceed the prewar figure, they are still too small for the population. This is particularly the case with large cities.

For instance, the park area per person is 0.31 tsubo in the ward areas of Tokyo, and 0.34 tsubo in Osaka City.

For securing proper management and improvement of urban parks, the Urban Park Law was enacted on April 20, 1956. It will add much to improving the parks in Japanese cities.

D. Water Supply

Since 1890 when the Water Supply Law was enacted, construction of water supply facilities and their maintenance and administration have been supervised by the central and prefectural governments.

In the last war, great damage was done to the water supply facilities by air raids, but by the constant efforts of the people concerned they have recovered to reach the prewar level. Partly because no extension works were executed during the war years and partly because the amount of water used per person has increased with the dissemination of knowledge of sanitation, in most cities the water supply has come to the limit of the capacity of the water works system.

Extension and construction works are being rapidly carried out. The present population served is about 29.9% of the total population, as is shown in the following tables:

Item	Cities	Towns	Villages	Total (Average)
Total number of cities, towns or villages	484	1,853	2,987	5,324
Number of cities, towns or villages having water works	385	519	355	1,259
Water supply pervasion rate (%)	79.5	28.0	11.7	(23.6)

Item	Cities	Towns	Villages	Total (Average)
Total population	48,830,771	23,657,189	15,881,262	88,369,222
Population supplied	24,349,476	1,719,171	375,539	26,044,186
Water supply pervasion rate (%)	49.7	7.3	2.4	39.9

In recent years, with the increase in use of various purposes involving industry, irrigation and power generation, difficulties have risen in connection with the securing of the water source. Supply water must be allocated fairly and reasonably on the multiple purpose use principle. The allocation of water ought to be examined carefully for each river in close relation to the river planning, regional planning and town planning.

E. Sewerage

Sewerage works are regulated by the Sewerage Law and the City Planning Law. The present sewer system is utterly inadequate as compared with that of water supply, because the latter is considered as the first requisite. However, as Japan is a rainy country and most of her cities are in the low land along the seashore, they are subject to floods, and it is keenly felt that the sewerage facilities must be increased and improved in such communities.

Although the progress is slow for financial and other reasons, construction of sewerage works is increasing year by year.

F. Development of Government Office Center

In most Japanese cities, public buildings such as prefectural office, city office and branch offices of the central government lie scattered in various parts without any definite plan, resulting in inefficiency of office works as well as causing inconvenience to the citizens.

When the Government Office Building and Repairs Law and the City Planning Law were amended early in 1956, it was made possible to develop a center for various public buildings and the Ministry of Construction has started guidance in this connection.

G. Zoning

In Japan there are established the following zones and areas:

(1) Use Zones and Use Areas

These are designated usually in urban areas with a view to regulating the use of buildings to be built there. There are Commercial Zone, Residential Zone, Quasi-Industrial Zone, Industrial Zone, Exclusive Residential Area, Exclusive Industrial Area, and Special Use Area (Special Industrial Area and Cultural Area).

(2) Fire Zones and Quasi-Fire Zones

As the Japanese cities are for the most part built up with wooden buildings, these zones are established so as to prevent fires, and it is provided that the buildings in these zones must be fire-proof or fire-resisting (wooden construction covered with mortar).

(3) Space Area

In the area designated as a Space Area the buildings must conform to established ratio of building volume to lot and to established building coverage so that the residential environment may be kept good.

(4) Other Zones and Areas

In addition, there are Height Area where the height of buildings is regulated, Scenic Area to maintain the scenic beauty and Green Area to prevent the city from expanding in a haphazard manner.

The number of the designated zones and areas is shown below:

Number of Cities etc. with Designated Zones and Areas, Classified by Population

(As of May 1956)

	6 Major Cities	Pop. over 200,000	Pop. over 100,000	Pop. over 50,000	Pop. over 30,000	Towns and Villages	Total
Use Zone	6	29	55	68	25	10	193
Exclusive residential area	2	3	9	12	2	2	30
Exclusive industrial area	1	4	3	3			11
Special Industrial area	1			1			2
Cultural area	1			1		1	3
Fire Zone	6	22	21	9	4		62
Quasi-Fire zone	6	29	47	60	15	4	161
Space area	2	4	3	7	3	1	20
Height area	3		1	1			5
Scenic area	1		1	1			3
Green area	2	4	4	1			11

H. Fire-Proof Belt

The Law for promotion of Fire-Proof Building was enacted in 1952 for the purpose of protecting the cities against fires and utilizing the urban areas more intensively.

The Law prescribes that for construction of fire-proof buildings in fire zones a subsidy shall be granted for half the difference between the construction cost of such buildings and that of wooden buildings. Up to the present, fire-proof belts in fire zones have been designated in 63 cities. In 1952 state subsidies amounting to 200,000,000 yen were given for 300 buildings (23,00 tsubo), in 1953 198,000,000 yen for 400 buildings (40,500 tsubo), in 1954 90,000,000 yen for 230 buildings (18,000 tsubo) and in 1955 62,000,000 yen for 250 buildings (13,000 tsubo) to contribute to making cities non-combustible. (1 tsubo=35.50 sq. ft.)

I. War-Damage Reconstruction Works

Shortly after the war, it was determined that city planning should be worked out for the stricken areas and areas connected with them, and the land readjustment works be early carried out for 59,500 ha. of stricken areas.

However, as it became obvious that because of our post-war economic distress the completion of all the works by 1950 as originally scheduled was next to impossible, the execution policy of the works was reexamined in 1949, and it was decided that 28,100 has. which was regarded to be the most urgent out of the 59,500 has. of stricken areas should be the First Land Readjustment Work Areas to be completed by 1954.

Based on this program, land readjustment works were started for the 115 war-damaged cities, but principally for financial reasons, it became

necessary to extend the execution period of the program by 3 years or so.

J. Urban Disasters

Most Japanese houses, even those in cities, are wooden, and they are often destroyed in large numbers by fires, earthquakes or floods. In the cities where much damage was caused, rearrangement of the built-up areas has been executed so that they may not be subjected to disasters again.

These works done since 1946 are shown below:

City	Cause	Year	Land replotting tsubo	Cost yen
Iida	Fire	1947	218,650	90,563,000
Fukui and 6 Neighboring Towns	Earthquake	1948	1,000,000	553,166,000
Ichinoseki	Flood	1948	335,000	210,385,000
Noshiro	Fire	1949	218,385	149,700,000
Atami	Fire	1950	42,200	90,000,000
Matsuzaka	Fire	1951	31,500	28,000,000
Tottori	Fire	1952	540,450	480,000,000
Iwauchi	Fire	1954	417,000	220,000,000
Odate	Fire	1955	13,680	33,856,000
Niigata	Fire	1955	108,000	95,700,000
Noshiro	Fire	1956	121,000	120,739,000

(1 tsubo=35.58 sq.ft. 365 yen=
one dollar)

K. Land Replotting

In Japanese cities, the residential areas consist of small building lots. Therefore, when a road is widened or a park is constructed, many people who have been living there lose their land and many others find their land diminished or deformed to be less useful as building lots.

In order to cause such unreasonable results, the land to be used for a road or a park should be obtained not by purchasing but by reducing the acreage of all building lots within a large area. For this purpose, land replotting is executed.

All the building lots for dwellings, public buildings, schools, markets, etc. are relocated, and substitute lots are offered for all original lots according to their acreage. If need be, irregular or too small lots are combined and redivided for adjustment.

The replotting and redividing are determined by the Land Readjustment Council consisting of persons elected from among the land owners, lease holders, persons of learning, etc. The project may be executed by an association, local public body or government agency. In the past, land replotting projects have greatly facilitated the reconstruction and development of Japanese cities. The land replotting projects executed hitherto are:

	Executed by government agency or public-body	Executed by association	Total
No. of projects	494	1,089	1,583
Area	66,500 ha	36,600 ha	103,100 ha

1 ha=24.7 acre

L. Improvement of Greater National Capital District

Nearly 300,000 people annually flow into Tokyo, constituting about 30% of the population increase for all Japan.

In Tokyo, as it is economically impossible to improve urban facilities in proportion to this concentration of population, there are seen various evils of an excessively large city, such as traffic congestion, housing shortage and deterioration of environment. As a means to overcome these



Housing act in Japan

evils, the Greater National Capital District Improvement Law was enacted in the last Diet Session.

This Law prescribes that the Greater National Capital District should consist of three areas divided by concentric circles, that in order to prevent the central built-up area from further expanding, a green belt about 10 km wide should be set up around it, and that cities outside the belt should be developed as the satellite cities.

M. Large Scale Development of Building Lots

The concentration of population in large cities is becoming more and more conspicuous and, if let alone, this would naturally cause development of slums in the interiors of the cities and irregular development of unhealthy and inefficient urban districts around the cities proper.

Thus it has become necessary to develop healthful urban districts in the environs of the large cities. The Japan Housing Corporation established in 1955 and the administrative agencies concerned are to execute housing estate development projects by means of land replotting.

With regard to the location and scale of the estates to be developed, there have been designated 5 such estates in the Tokyo-Yokohama Area, 5 in the Osaka-Kobe Area, 2 in the Nagoya Area and 3 in Northern Kyushu--15 estates in all, each 100 ha or so.

III. THE HOUSING ACT IN JAPAN

A. Housing Situation

Owing to the fact that most of the houses in Japan are built of wood, the damage caused by air raids during the last war was appallingly severe. In 1945, out of the estimated total of 14,000,000 housing units for the whole country, 2,100,000 units were lost through war damage. Furthermore

550,000 units were compulsorily torn down as a protection against air raids. Thus, as a result of bombing and the anti-air raid measure of tearing down houses, 18.9 per cent of the total number of dwellings were lost, and in the cities about 41 per cent of the total housing units were lost. It is estimated that before the war the number of housing units annually built averaged 320,000, but during the war years there was practically no new supply of housing. Between 1937 and 1945 there developed an estimated housing shortage of about 1,180,000 units.

With the termination of hostilities, a large number of civilians and service men were repatriated from abroad. By May 1950 their number had reached approximately 6,300,000, of whom 3,150,000 were civilians (about 830,000 households). The repatriates constituted 8.3 per cent of Japan's total population in 1948.

In a word, there developed a tremendous housing shortage of about 3,870,000 units attributable to the war directly or indirectly. During the ten years following the war, 4,239,147 units have been built as a result of Japan's economic rehabilitation and the efforts of her people, and the housing situation is improving a little. However, when compared with the food and clothing conditions which have already reached their prewar levels, the housing situation still constitutes an unsolved problem.

As of April 1952, the housing shortage was estimated at 3,160,000 units. As against this, about 3,870,000 units were built by March 1955 through housing construction centering around the First Public Operated Housing Program which started in fiscal year 1952. In the meantime, fresh housing need developed as a result of the increase in population, the loss of houses in disasters, etc. According to the results of the Housing Conditions Survey conducted in August 1955, the housing shortage as of the

same date was 2,708,000 units. A breakdown of the figure is as follows: number of families living in non-dwellings 142,000; families living with other families 670,000; those living in overcrowded space 770,000; those living in unsafe superannuated houses 1,126,000. In addition, it is estimated that there is an annual increase of about 250,000 units in the housing need, caused by population increase and destruction of houses by disasters, etc.

The number of "tatami" (mats) per person indicates one aspect of the housing condition. In 1941, before the war, it was 3.8 (Housing Survey in the Six Major Cities), while the postwar figures are: 1948---3.4 (Housing Survey); 1950---3.4 (National Census); 1953---3.3 (Housing Statistical Survey). These figures show that there has been no improvement in this aspect of the housing situation.

With regard to the condition of the existing houses, the results of the Housing Conditions Survey of 1955 show that 25 per cent of the country's dwellings are in need of repair and that 2.5 per cent are unsafe or beyond repair. In this aspect too, the seriousness of the housing situation is manifest.

The number of dwelling units constructed showed an annual increase between the years 1945 and 1948, but in 1949 it decreased sharply to about half the number constructed the year before, and continued to decrease gradually until it hit the bottom in 1951. From 1952 it began to rise, but again in 1954 there was a slight decrease. In 1955 the Government decided to adopt housing measures as one of its major policies and to actively implement them, from which fact a brighter future is anticipated for housing construction.

As regards the relationship between the owners and occupants of dwell-

lings, the situation in urban areas was as follows in 1941: owner occupied dwellings 22.3, per cent, supplied housing 1.8 per cent, rental housing 75.9 per cent. In other words, before the war the percentage of rental housing was overwhelmingly large. On the other hand, after the war, the situation was reversed and the percentage of the owner-occupied dwellings became conspicuous. The figures for 1948 were: owner-occupied dwellings 52.5 per cent, supplied housing 8.5 per cent, rental housing 39 per cent. The Housing Conditions Survey of 1953 revealed that this trend had become even more marked, the data being as follows: owner occupied dwellings 63 per cent, supplied housing 8 per cent, rental housing 29 per cent. This fact plainly indicates the stagnant status of rental housing construction and means that the housing problem is more particularly concerned with the low-income people who are not able to build their homes for themselves. In these circumstances, what needs to be done in order to solve the present housing problem is to build a large number of housing by means of financial aid from the Government, such as public-operated housing, housing built with loans from the Housing Loan Corporation and Japan Housing Corporation housing, and at the same time to promote private housing construction.

B. Public-Operated Housing

When the last war ended, there were a vast number of people who were unable to buy homes for themselves or whose rent-paying capacity had been drastically lowered, as a result of sudden changes in economic conditions which the war had brought about. It was apparent that the only way in which low rent housing could be made available to these low-income people in dire need of housing was through the State's financial aid. Accordingly the Government took up housing reconstruction as one of the public works and from 1945 began to grant a subsidy to local public bodies to cover

about one-half of the construction cost. In 1951 it became necessary to add further impetus to this system of Government subsidized housing and to re-examine it to make it rational and put it on a long-range planning basis, and the Public Operated Housing Law was enacted that year.

The construction of public-operated housing started in 1945, and by the enforcement of the Public-Operated Housing Law in 1951 long-range planning was adopted for the program in respect to both the construction and management phases. The 2nd "Public-Operated Housing Construction Three Year Program" based on the above-mentioned Law, is now under execution. Up to March 1956, 497,307 units had been built.

Work Classification	Type of Structure	1945	1946	1947	1948
General	Emergency housing	42,959			
	Wooden		25,815	30,840	32,957
		Class A			
		Class B*			
	Simple fire-resisting (1 story)	Class A			
		Class B			
	Simple fire-resisting (2 stories)	Class A		44	138
		Class B*			
	Fire-proof	Class A		48	1,725
		Class B*			
	Sub-Total	42,959	25,815	30,932	34,820
Disaster Rehabilitation	Existing buildings converted into housing	38,171	21,790	8,080	3,232
	Total	81,130	47,605	39,012	38,052
	Wooden		1,200	3,084	4,800
	Simple fire-resisting (1 story)				
	Special type fire-proof				
	Sub-Total		1,200	3,084	4,800
	Grand Total		81,130	48,805	42,096

Notes: The asterisk (*) denotes housing built for those low-income people whose monthly income is 16,000 year or less.

(s) denotes housing for small families

1949	1950	1951	1952	1953	1954	1955	Grand Total
							42,959
21,732	21,035	14,212	12,993	22,964	22,067	16,866	221,481
		5,206	5,163	9,358	7,690	10,440	37,857
		303	727	1,814	1,987	7,727	12,553
				931	1,127	1,241	7,474
						(s)	
						4,175	
382	960	938	2,859	6,226	6,944	4,712	23,203
			24		42		66
						(s)	
2,315	4,010	5,251	3,565	8,533	8,428	2,027	37,132
			48	200	396	499	1,143
24,429	26,005	25,810	25,379	50,026	48,676	49,017	383,868
1,253	2,082						74,608
25,682	28,087	25,810	25,379	50,026	48,676	49,017	458,476
880	3,996	1,626	7,848	7,704	3,270	1,642	36,050
				40	1,060	1,361	2,461
			150	170			320
880	3,996	1,626	7,998	7,914	4,330	3,003	38,831
26,562	32,083	27,436	33,377	57,940	53,006	52,020	497,307

Public operated housing means housing which a local public body (prefecture, city, town or village) builds with a State subsidy and rents to house needing low-income people at a low rent. The enterpriser is always a local public body.

There are two types of public-operated housing: Class A and Class B. Class A is for persons whose monthly income minus 1,000 yen for each dependent is between 6 and 15 times the rent, provided the amount does not exceed 32,000 yen. Class B is for low-income persons whose monthly income minus 1,000 yen for each dependent is not more than 16,000 yen or who have lost their homes in a disaster.

Construction of public-operated housing constitutes the core of the Japanese housing policy. For planned construction of this type of housing, it was decided that the Minister of Construction should prepare a Public-Operated Housing Construction Three Year Program for each three year period beginning in 1952, and when it is accepted at the Cabinet meeting, present it before the Diet for approval. On the basis of the approved Three Year Program, each prefecture works out its own plan, and the cities, towns and villages respectively work out their own plans according to the prefectural plan. During the period of the 2nd Three Year Program now under execution, 155,000 units of public-operated housing are to be constructed.

For the construction of Class A public-operated housing, the State subsidy given is one-half of the construction cost, and for that of Class B housing, it is two-thirds. Also, according to the financial circumstances of the enterpriser, about two-thirds of the money to be borne by the enterpriser is loaned by the central government. No State subsidy is given for the excess amount over the standard construction cost established by the Minister of Construction. The standard construction cost for 1956

(except in Hokkaido) is:

Wooden (10 tsubo: 351,000 yen

One-storied simple fire-resisting (10 tsubo): 430,000 yen

Two-storied simple fire-resisting (12 tsubo): 591,000 yen

4-5 storied fire-proof (12 tsubo): 726,000 yen

(10 tsubo=355.8 sq. ft.)

(365 yen=one dollar)

It is provided in the Public-Operated Housing Law that the limit of the rent of the public-operated housing should be an amount equivalent to the total of (A) and (B) given below divided into twelve: (A) the amount of amortization computed on the assumption that the construction cost (minus the state subsidy) is repaid annually in equal amounts with an interest of not more than 6 per cent per annum over a period equivalent to the durable years plus (B) the amount of expenses for repairs, management and damage insurance.

The enterpriser determines the rent within this limit. The Law fixes the durable years as follows:

Wooden building: 20 years

One-storied simple fire-resisting building: 35 years

Two-storied simple fire-resisting building: 45 years

Fire-proof building: 70 years

In calculation, the expenses for land are refunded over a 70-year period.

The monthly rent thus computed is usually between 1,000 yen and 2,600 yen.

The rent being low, there are yearly very many applicants for public-operated housing. For the 1,669 units of public-operated housing in

Tokyo for which applications were invited in January 1956, 64,125 families or 38 times as many applied. The Law provides that the selection should be made on a fair basis by referring to the actual state of each applicant's housing need, and in accordance with the standards established by Cabinet Order and the provisions of the enterpriser's rebulations. However, those whose housing need has been caused by a disaster or slum clearance may be preferentially admitted.

In regard to the quality of public-operated housing, those built before 1948 were makeshift buildings of very inferior quality. Since then, however, partly through substantial raising of the unit construction cost and partly through positive technical guidance on the part of the Ministry of Construction-----for instance, making housing incombustible by employing various kinds of fire-proof and fire-resisting structures-----the quality of the housing has yearly improved. Also, with the provision of more and better common facilities, the environment is being improved in spite of the small housing.

C. HLC Housing

The Housing Loan Corporation was established in 1950 with Government invested funds to cope with the acute postwar housing shortage, and it advances housing funds on long terms and at a low rate of interest.

Financing various kinds of housing construction, it is playing an important role in carrying out Japan's housing policies.

At the outset, the business of the Corporation was restricted to extending loans to those who had part of the funds for building houses for their own use and to the housing associations or similar agencies which, established with funds invested by a prefecture, city, etc., construct and

operate rental housing. The annual interest was 5.5% and the period of repayment 18-35 years. In 1953, when the Industrial Workers' Housing Fund Financing Law was enacted, it was also provided that the Corporation should loan out funds to industrialists intending to construct housing for their employees, at an interest rate of 6.5% per annum. In 1954 it was further stipulated that the funds be loaned out also (1) for buying and developing land by a prefecture, city or housing association intending to develop building sites which are now in short supply, (2) with a view to improving the rate of effective use of urban land, for construction of stores and offices which constitute the first floor of multi-storied rental apartment houses, and (3) for construction on an estate by a prefecture, city or housing association of housing to be sold on monthly instalments. In 1955, the scope of financing was enlarged again to cover loans for the extension of existing dwellings.

Also, in order to promote loaning out of housing funds by financial institutions, the Housing Finance Insurance Law was enacted. This Law provides that the Corporation guarantee 80% of the housing funds lent by financial institutions if they should not be collected.

During the years between 1950 and 1955, 300,000 units of housing were constructed and 2,7000,000 square meters of building lots were developed through financing by the Corporation. The total amount of loans exceeded 100,000,000,000 yen. The financing plan for 1956 involves financing for 77,000 units in total of owner-occupied housing, rental housing, industrial workers' housing and extension, and buying and developing of 1,300,000 square meters of building lots.

D. Japan Housing Corporation Housing.

The Japan Housing Corporation was established in July 1955 as a link

in the chain of the Government's housing policies for relieving the housing shortage.

The most effective measure for checking large cities from growing too big is to develop statellite cities around them and construct there housing estates. To attain this purpose it is essential to secure extensive housing supply without being restricted by the division of the local administrative areas and also to develop building lots by the replotting of land.

A new system of housing is also required for meeting the increasing demand of housing for wage earners. The Japan Housing Corporation was established to meet these requirements.

The functions of the Corporation are:

1. Construction and management of rental housing and construction and sale of housing for sale.
2. Construction of facilities for the convenience of the occupants (stores, public bath house, etc.) and renting or selling thereof.
3. Execution of land replotting projects and renting or selling of building lots thus developed.
4. Other works incidental to housing construction.

Housing Built by Japan Housing Corporation

The Japan Housing Corporation started its activities with a target of constructing 20,000 units (rental housing: 10,000 units; housing for sale; 10,000) in various parts of the contry by the end of March 1956. All the works have been started. Some were already completed in April and most of them are to be completed in the autumn.

Construction of additional 23,000 units (rental housing: 12,000 units; housing for sale: 11,000 units) is scheduled for fiscal year 1956 (April 1956-March 1957) and efforts are being made for securing the land

for the building sites. In case of a large housing estate, shops, nursery, children's playground, etc. are constructed on the estate and are sold or rented for the benefit of the occupants. (In the 1956 program, 8,000 tsubo of land are allocated as the sites for such facilities.) Extension or construction of a primary school is also necessary when the estate is very large. In this connection, a concrete plan is being worked out in concert with the interested authorities.

Adequate provision of these facilities ought to be and will be a feature of the Corporation's housing.

Concerning the type and structure of the Corporation's housing, most of the buildings are 4 or 5 storied fire-proof apartment houses for married persons. According to the locality, however, multi-storied apartment houses provided with elevators or one- or two-storied terrace houses of simple fire-resisting structure, or, if necessary, apartment houses whose first floor is used for stores, or apartment houses for bachelors are also built.

The rent is 4,200 yen in case the floor area is about 13 tsubo, and the qualifications for the occupant are that he has a monthly income of 25,000 yen (including tax) or more. In Japan today a person with this much income belongs to the middle or higher brackets of the wage-earners, and there is a general opinion that considering the income distribution of the house needing people the Corporation should build housing of a rent which people of somewhat lower brackets can afford to pay.

The housing built and sold by the Corporation has the following features in contrast with other housing built for sale (such as those built by local public bodies, housing associations or private firms).

1. No down payment is needed;
2. Sold on long term instalments (20 years); and
3. The buyer or the enterpriser may rent or sell the bought housing to his employees.

* Development of Building Sites by the Housing Corporation

Land development by the Japan Housing Corporation aims at securing sites for housing estates the Corporation constructs and at supplying on a large scale sites for those who need lots. It may be said that this is a business which constitutes the foundation for developing new urban districts as satellite cities around the cities where the housing shortage is acute. The development is usually executed by means of a land replotting project.

The new urban districts will be fully provided with public facilities such as roads, sewage works, parks and green zones. The main roads will be paved and planted with trees. Regarding the sewage works, sewerages will be laid throughout the districts and will be connected with the main pipes. More than 5 per cent of the total area developed will be used for parks. In short, every effort will be made to produce good environment.

On this principle, 3,000,000 tsubo of land have been designated as the areas to be developed under the First Phase Project (1955 - 1957), and steps are being taken for buying and replotting the land.*

* Reprinted from Housing and Town Planning in Japan, Ministry of Construction, Japan Housing Corporation, Housing Loan Corporation, Tokyo, 1956



MIYAKUBO

市川市

ICHIKAWA

TOKYO

TOKYO BAY

IV. ICHIKAWA, CHIBA

Until the end of the nineteenth century, Ichikawa had been a small village, 13 miles to the east of Tokyo, on the road to Chiba. Industry and commerce were expanding rapidly in Tokyo. Workers from Tokyo, because of its proximity, surged into this peaceful village and used the two new railroads as a convenient means of transportation. The influx of people did not benefit the village proportionately. They were neither contributing much as taxpayers nor were they supporting the village by trading there. Ichikawa became a satellite town, but with a population of 120,000 it should not any longer continue as a "bedroom" town. Recognition of this town's growth was acknowledged in the recently enacted Greater National Capital District Improvement Law which has made provisions for consolidating the town eventually as a residential zone of Tokyo.

Climate

The range of climate is considerable, extending from a humid subtropical type to a humid continental type. Seasonal differences in temperature are accentuated by the nearness of the Japanese Islands to the Asiatic mainland and by their position in the track of monsoons. During the summer, warm, moist air passes over Japan towards the continent, and oceanic winds blow from the south or southeast. In winter, cold dry air passes from high-pressure areas on the mainland across Japan to the warmer Pacific Ocean, so that prevailing winter winds reach Japan from the northwest.

Rainfall and Wind

There are three wet seasons in Japan: the first, from the middle of April to the beginning of May; the second, from the middle of June to the beginning of July; and the third, from early mid July until the second half

of August. September is the wettest month; January, the driest. During the four months from November to February, inclusive, only about 18% of the whole rain for the year falls. But Japan is emphatically a wet country so far as quantity of rainfall is concerned, the average for the whole country being 62 inches per annum. Still there are about four sunny days for every three on which rain or snow falls, the actual figures being 150 days of snow or rain and 215 days of sunshine.

During the cold season, which begins in October and ends in April, the prevailing northerly and westerly winds develop considerable strength. But during the warm season, from May to September, the prevailing winds are light breezes varying from southeast to southwest according to locality. A calamitous atmospheric feature is the periodical arrival of storms called "typhoons." Their season is from June to October, September being generally the month when they are most frequent. But they occur in other months also, and develop a velocity of 5 to 75 miles an hour. It is particularly unfortunate that September should be the season of greatest typhoon frequency, for the earlier varieties of rice flower in that month, and heavy storms do much damage not only to crops and property but endangers lives.*

*Encyclopedia Britannica, Climate in Japan, p.896

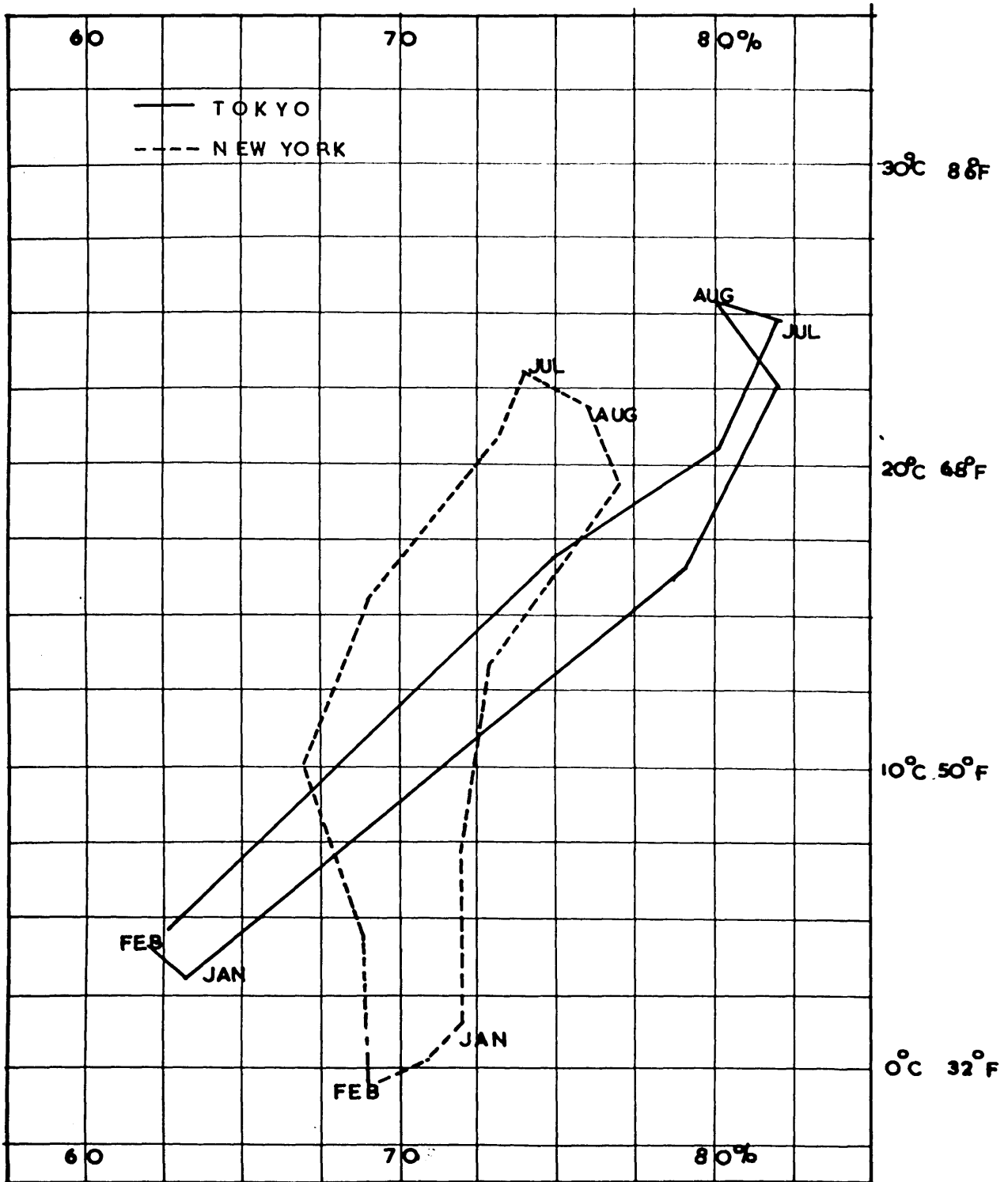
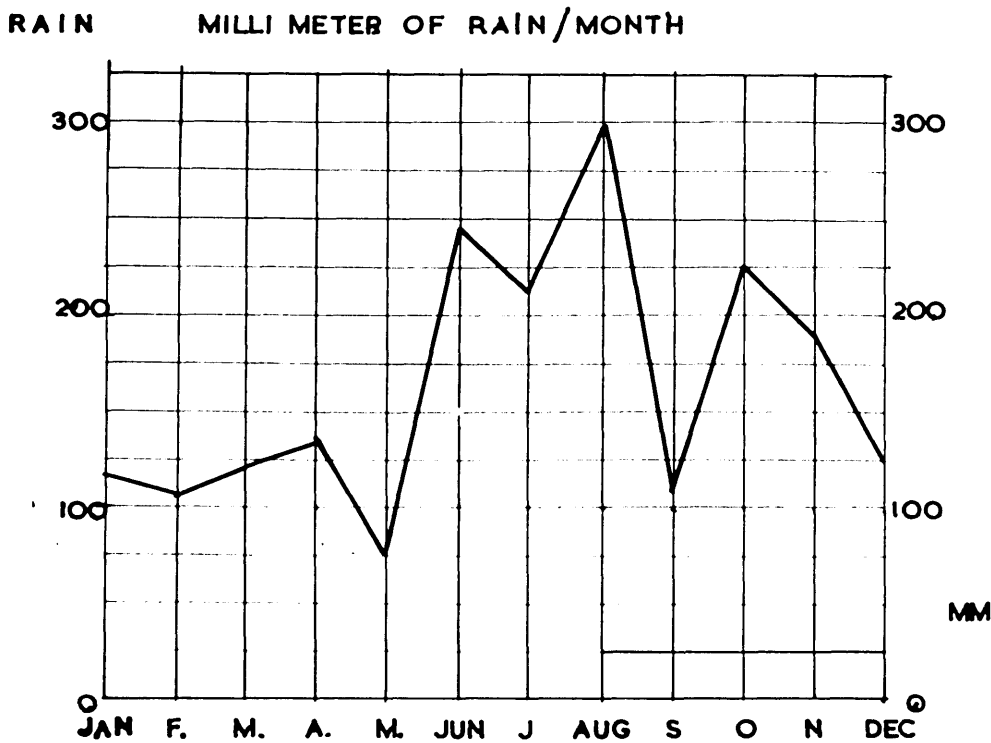
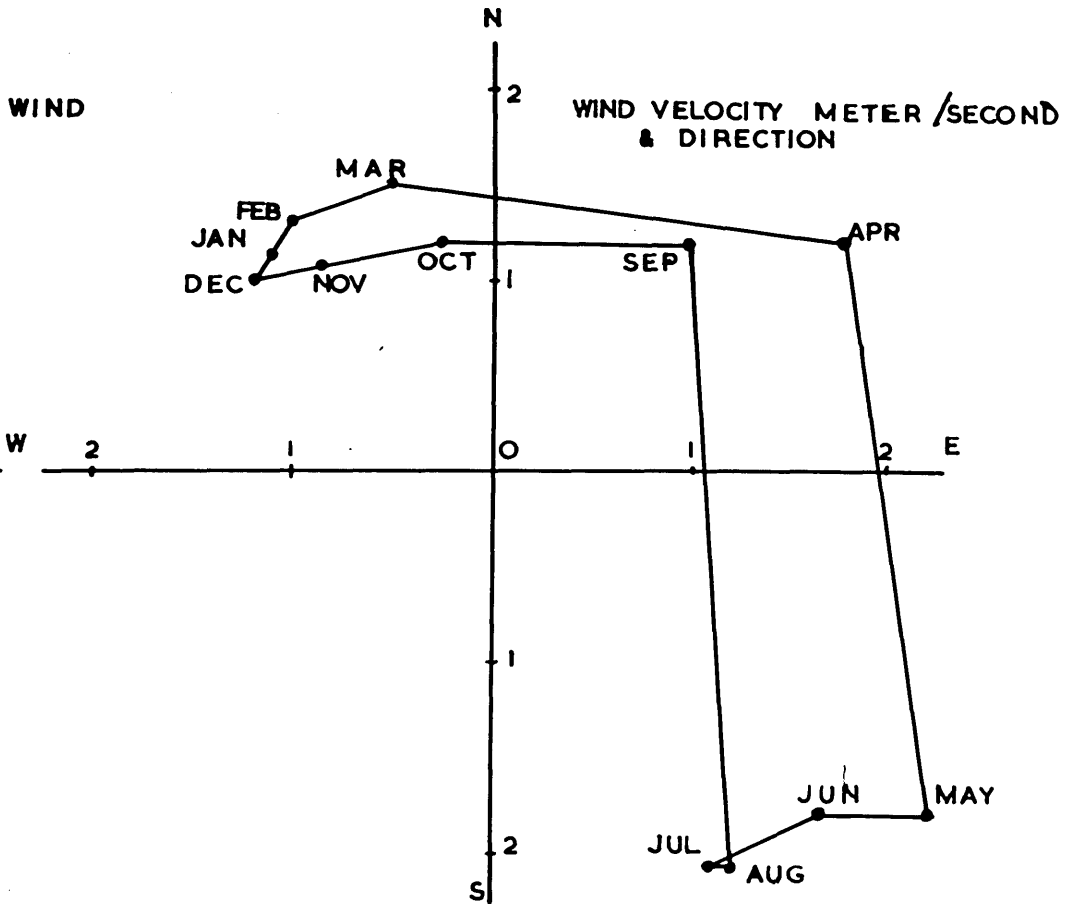


DIAGRAM OF CLIMATE

HUMIDITY, TEMPERATURE IN TOKYO & NEW YORK

Design Standard By Institute Architecture Japan
 VOL II. CLIMATE P. 2



CLIMATE CONDITIONS TOKYO

Population

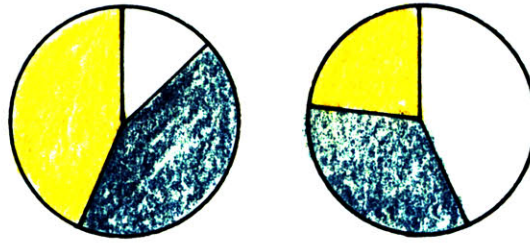
In the census taken in October of 1955, the population of Ichikawa had reached 120,706. In comparison with the census of 1934, the number of families had increased 2.63 times; the total population, 2.51 times; and the density of population, 2.32 times. These figures show that this town has every promise of increasing in the coming years.* (See III 4.05 4.06)

Year	Population	Density People/sq.km	Average of persons in family	Families
1934	40,869	1,781	4.8	8,437
1936	45,426	1,979	4.9	99,256
1938	48,696	2,122	4.8	10,190
1940	58,059	2,530	5.0	11,702
1942	70,083	3,054	4.8	14,705
1944	69,711	3,038	4.4	15,198
1946	84,855	3,697	4.6	18,567
1948	95,091	4,040	4.6	20,710
1950	102,506	3,097	4.6	22,199
1955	120,706	-----	---	-----

Economy

As a satellite town, Ichikawa's economy is supported mainly by those in services and industry. Farming and light industry occupy the natives of this town but do not affect the town's economy too strongly. A study of the following tables will reveal the distribution of workers in Ichikawa as compared with Japan as a whole:

* Municipal Census in Ichikawa 1992 P 6.



		Ichikawa	Japan
Agricultural Workers	□	11.08%	48.02%
Service Workers	■	45.90%	30.21%
Industry	■	43.02%	21.87%

These figures show clearly that this town has changed more and more from an agricultural village to a residential type of town. About 10% of the families work in rice fields and orchards--a percentage too small for the consumption of the community. In comparison with the usual average under cultivation in Japan, Ichikawa's farmers are able to produce only 56%. They must therefore confine their produce to fruits and vegetables which bring a good price in Tokyo rather than spend their time on the less profitable cultivation of rice. (Ibid p.11)

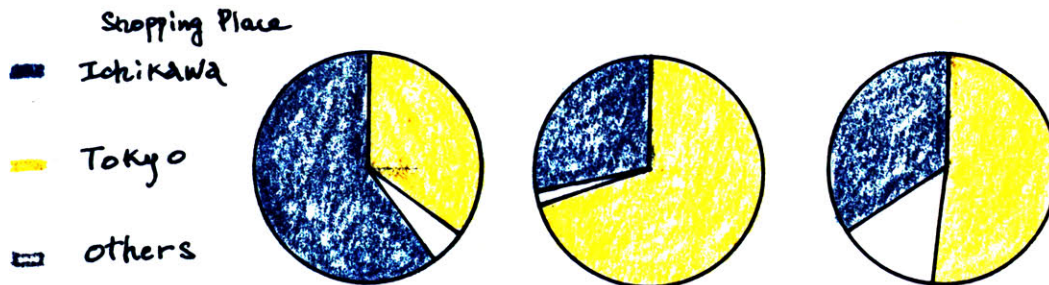
Mercantile business in this town suffers because the majority of the population purchase their needs in Tokyo. This fact has an injurious effect on the economy of a satellite town. Generally speaking, in Japan shops cater to around 17 families apiece.* Competition among shopkeepers is so great that no one can make much of a profit. In contrast, in England a shop caters to 30 families; in Tokyo, 15 families. Therefore 80% of the shops do not hire outside help and their gross income during a month is, on the average, only two hundred dollars. (Bungei Shunjyu, Sept. 1956)

In Ichikawa 1440 shops are centered around seven railroad stations, a normal average as compared with other towns. Commuters as well as many of the other inhabitants purchase their wants in Tokyo instead of patronizing

their home town shops. This problem became so serious not only in Ichikawa but in other satellite towns that an investigation was launched to discover the reason for the lack of patronage. These questionnaires were sent out in 1951 in the form of cards, which were sent to 2,362 families, inquiring where goods were purchased and why they were purchased elsewhere. The results of the questionnaire are shown below:*

Occupant	Place of Employment	Shopping Place:		
		Ichikawa	Tokyo	Else-where
Salaried Person (1270)	Ichikawa (289)	172 (59.5%)	112 (38.7%)	5 (1.8%)
	Tokyo (867)	254 (28%)	604 (71%)	9 (1%)
	Others (114)	39 (34.2%)	65 (57.1%)	10 (8.7%)
Merchant and Factory Worker (500)	Ichikawa	258 (51.6%)	22.9 (45.8%)	13 (2.6%)
Others (592)	Ichikawa	345 (58.3%)	180 (30.4%)	67 (11.33%)
Total: 2362		1068 (45.2%)	1190 (50.3%)	104 (4.5%)

*Municipal Census (1952), Ichikawa, p. 82



Working Place Ichikawa Tokyo Others

The graph above shows the usual tendency of the pulling power of a big shopping center and obviously is supported by huge capital. Seventy-one percent of the people that always work in Tokyo and thirty-eight percent of the people working in Ichikawa, shop in Tokyo. The shops in Ichikawa are supported by barely 45.2% of the residents there.

The following reasons were given for the preference for shopping in Tokyo: (1) prices in Tokyo are cheaper; (2) there are many attractive department stores, which are conveniently located near the terminals; and (3) a better selection could be made through^a/variety of stores carrying the same goods. The conclusion was drawn that better facilities should be provided to induce people to buy in the environs.

Education

The development of education in Japan after the Restoration of 1868 can best be understood if it is realized that education was regarded as an instrument of national policy, directed towards the dual objective of spreading Western learning while preserving as far as possible those elements of national strength which resided in the native culture.

At the present time, the significant statistics on education are as follows:*

Type of School	Age	Percentage of Attendance	Percentage Students by Population
Kindergarten	3-5	4.2%	0.3%
Elementary School	6-11	99.5%	13.5%
Junior High School	12-14	99.0%	6.1%
Senior High School	15-17	57.5%	2.6%
College & University	18-21	7.6%	0.53%

*Standard of Architectural Design, Institute of Architecture in Japan, Vol. 3, p 146, 1951

Official statistics show school attendance during the compulsory period in Elementary grades to be 99.5%; and in Junior High School, 99.0%. This rate having been maintained for more than a decade, the literacy rate is now among the highest in the world.

In Ichikawa there are many types of schools and great opportunity for study as the following statistics on education as of October, 1951, show:*

Type of School	Number of Schools	Numbers of Students
Kindergarten	5	650
Elementary School	10	13,732
Junior High School	10	6,175
Senior High School	8	3,105
Colleges and University	5	1,141

*Municipal Census (1952), Ichikawa, p. 45ff.

The number of students mentioned above include those from adjacent villages and towns. (See Ill. 4.07 4.08)

Community Facilities

One of the greatest causes which have obstructed the development of community facilities was the economic change brought by inflation with its attendant lowering of the standard of living. In Japan the Government provided laws on the cultural and educational level to guide the citizen's activity, but neither the Government nor the local authorities could afford to investigate community facilities.

Much housing construction is still going on in neighborhood units of 10,000 persons; and, while the funds for community facilities are not yet forthcoming, the plans for them exist on paper, ready to execute.

In Ichikawa, due to the limited financial condition, only a few public buildings have been completed--a library, and a recreation park (see Ill. ^{4.07} map for Park and forest). The auditorium of the Junior High School is rented from time to time when a public meeting place is needed.

The need for a public facility which provides space for the many cultural

and recreational activities of the community is apparent. At present those interested in occupying their leisure time for instruction in the tea ceremony, flower arrangement, Japanese calligraphy, dancing and home cooking--the so-called traditional cultural background for every housewife and unmarried woman--must go for private instruction to a teacher's house. The men must use the playground of the school to play baseball or find a stream in which to fish. Since no public facilities have been provided, the people try to find for themselves any available places to spend their leisure time.

Currently there are in Ichikawa five movie theaters.

The public library gives free access to 9000 volumes. Lovers of the arts have organized to advance cultural purposes and are eagerly awaiting a community facility to enable them to promote such worthy projects as music, the tea ceremony, flower arrangement and painting.

Religion

There are many Buddhist temples and Shinto shrines scattered through the area. A playground and green space is usually found adjacent to these sacred structures. (See Ill. marked ^{4.10} Location of religious structures.)

Traffic

The people of Ichikawa depend for transportation mainly upon the railroad and the bus. At the seven stations in Ichikawa the morning and evening rush is comparable to the American commuters' daily routine. A study of the passengers indicates that 61%, or 63,788 persons, use commuters' tickets. Busses are utilized for short distance traveling, and connect neighboring towns and villages. (See Ill. marked ^{4.11} Bus Route.)

The main roads are eight and fifteen meters wide but are not finished for the most part. In the future, should traffic increase, these roads

will not be adequate. The new roads will need to be wider and finished in asphalt or concrete. (See Ill. ^{4.03} Map of Land Use in Ichikawa and Ill. of ^{4.011} the Present Major Artery.)



COMMUTERS TO TOKYO, WAITING AT AN ICHIKAWA
STATION



A TYPICAL GROUP OF SHOPS NEAR A STATION
IN ICHIKAWA



SHOWING THE NARROW SCALE OF A SHOPPING AREA
AS IT EXISTS NOW



DETAIL OF A MEAT MARKET IN ICHIKAWA

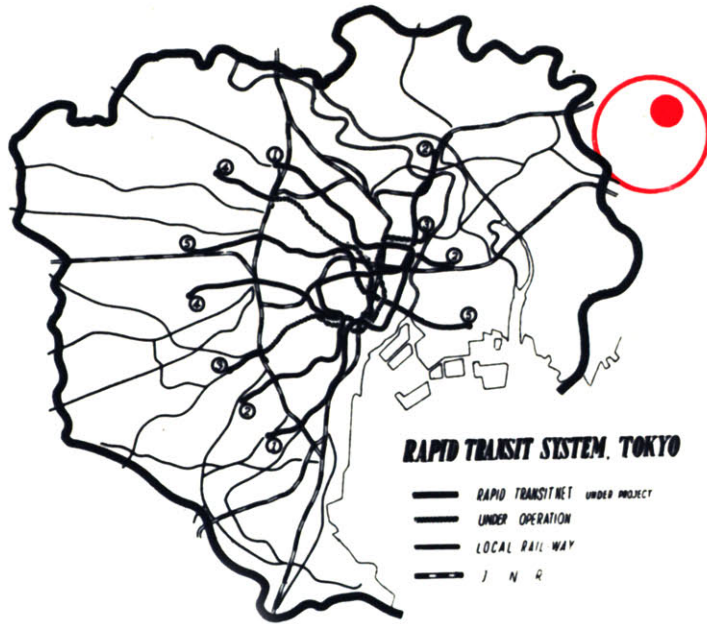


LEGEND

MAJOR ROADS	
RIVER	
PARKS	
EDUCATION	
PUBLIC INSTITUTION	
COMMERCE	
LIGHT INDUSTRY	
SERVICE INDUSTRY	
RESIDENCE	
SUBURB	

計画街路
 計画河川
 公園緑地
 文教地区
 公館地区
 商業地区
 工業地区
 住宅地区
 田園住宅地

GENERAL MASTER PLAN FOR ICHIKAWA



Master Plan of Expressways in Tokyo

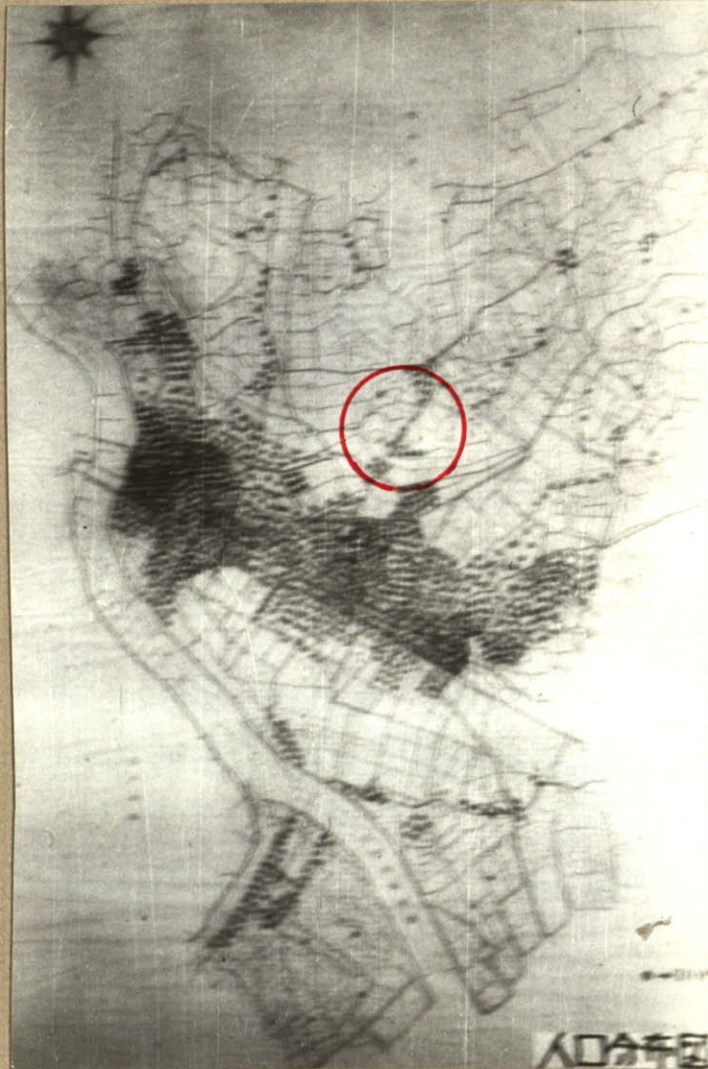




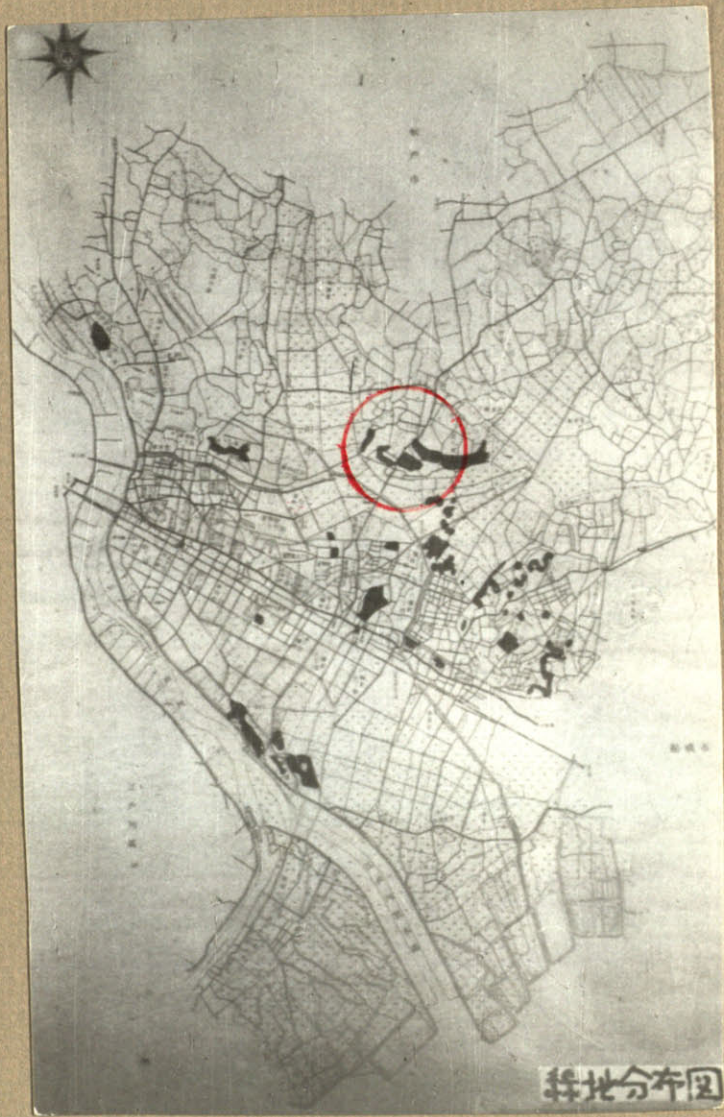
Light Grey ; 1945

Dark Grey ; 1955

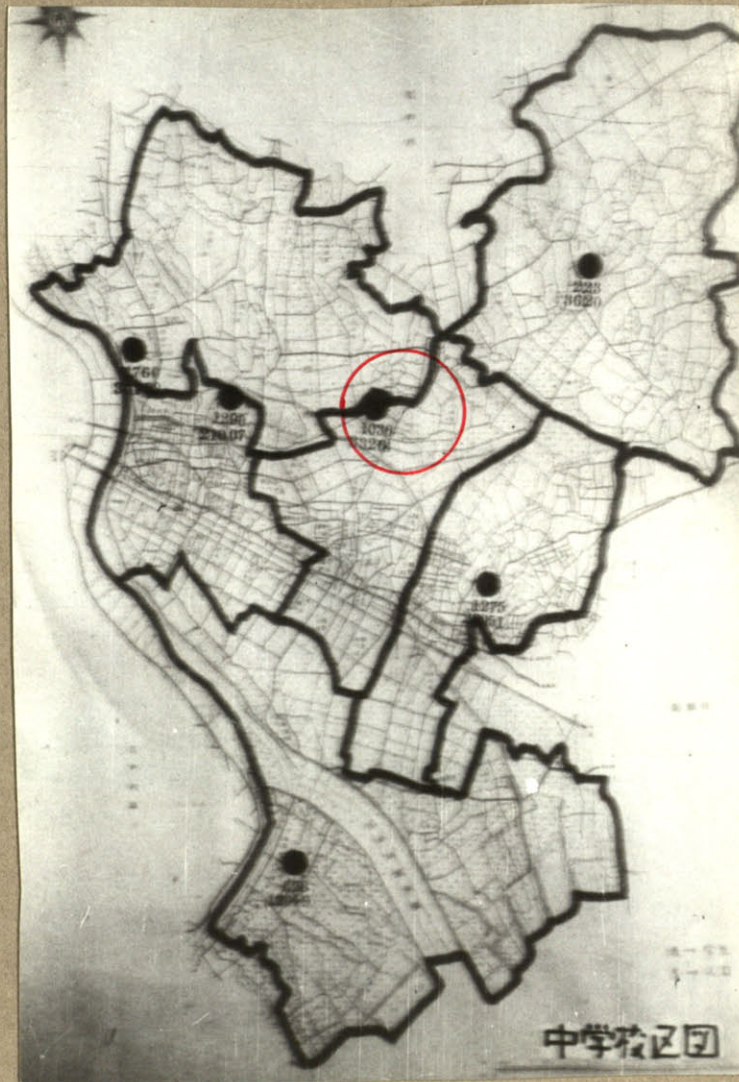
G R O W T H O F I C H I K A W A



DENSITY OF POPULATION



PARKS & FORESTS



JUNIOR HIGH SCHOOL ZONE

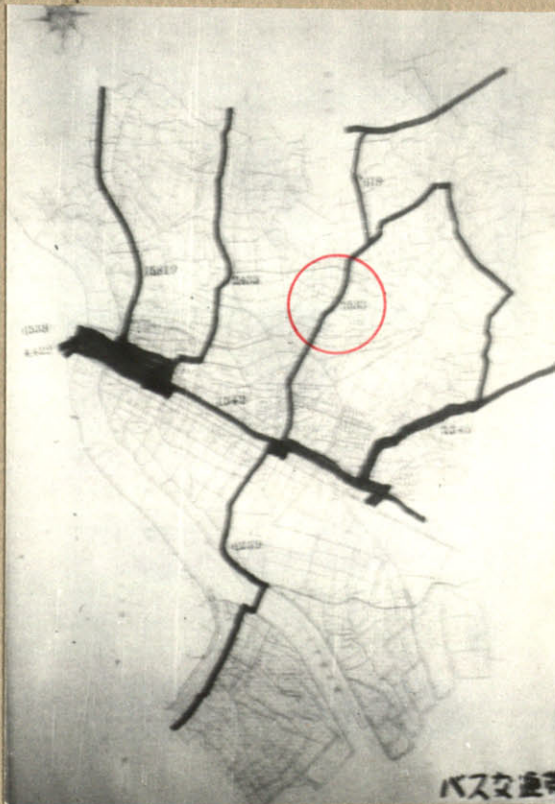
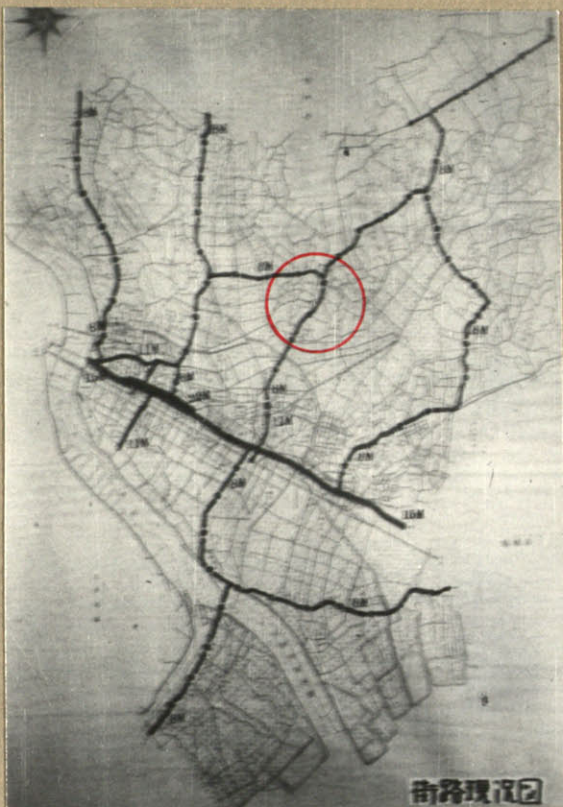


ELEMENTARY SCHOOL ZONE



LOCATION OF SHRINE & TEMPLE

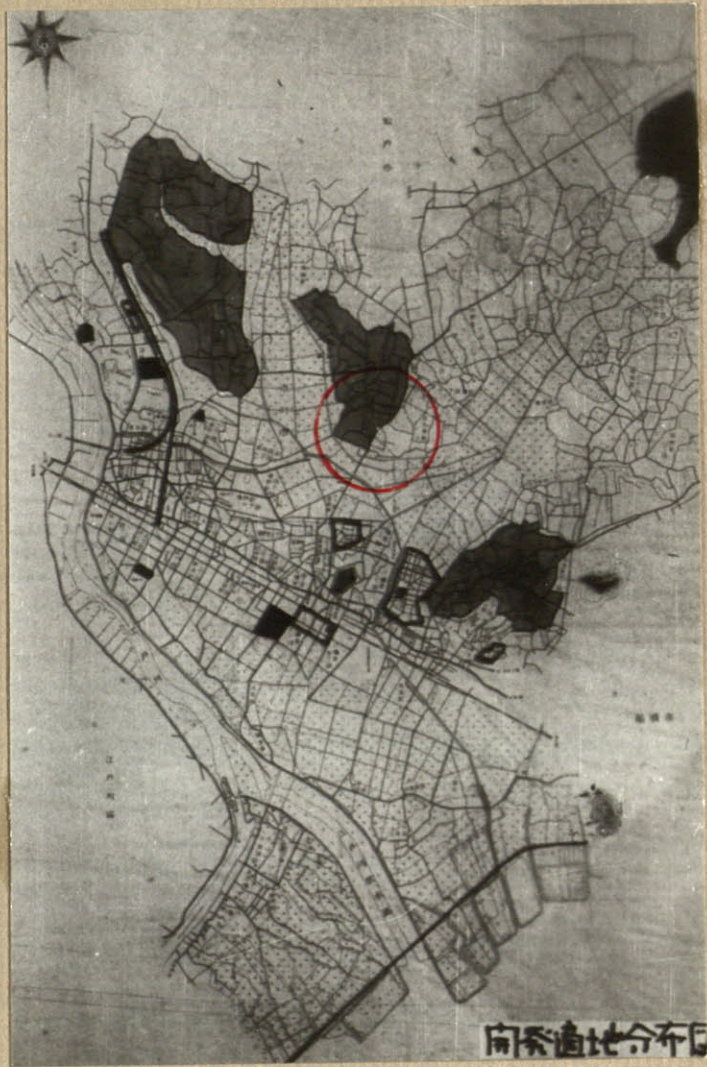
MAJOR ROADS



BUS ROUTES



RESIDENTIAL AREA



PROPOSED RESIDENTIAL AREA



Community Plan for Miyakubo

V. COMMUNITY PLAN FOR MIYAKUBO, ICHIKAWA

Miyakubo lies in an area about one mile to the north of Ichikawa. The purpose of this study is to plan a community unit for about 10,000 people (2000 families) to absorb the increasing population in Ichikawa and to organize the residential area. It is assumed that most of these people will commute to work in factories and offices in Tokyo and Ichikawa. The plan conforms to the newly developed idea of city planning as written in the Greater National Capital District Improvement Law enacted in the last Diet session.

The Site

The general site selected is the area designated "new housing area" on the proposed land use map approved by the Ichikawa City Planning Bureau. (See Ill. ^{4.13} Proposed Residential Area/Map of Land Use in Ichikawa. and ^{4.03})

Surroundings: To the north, Miyakubo is bordered by a road that branches off to several villages. This road will become a perimeter road of Ichikawa--as has already been planned--and will be connected with the express way to Tokyo, a distance of thirteen miles. (See Ill. ^{4.04} Master Plan of Expressways in Tokyo.) To the southeast and west are extensive rice fields where the water overflows at certain seasons. More and more houses are being built over a two-foot fill. The cheapness of such dampish low ground is the main attraction to those with limited income. (See ^{Ill 3.02} mounted pictures on next page.)

Through the rice fields run two roads toward Ichikawa from Miyakubo. A bus connects Ichikawa and Matsudo (68,367 people), a distance of about 3.8 miles to the north. The terminal is at the Ichikawa railroad station.

Topography: The land slopes gently from the rice field to a ridge 50 feet high for about half a mile. This site stands on a table land and the central area's slope is only one per cent. On the west side there is a 20-foot cliff with brush and trees. The average elevation of the site is approximately about 60 feet above sea level. (See Ill. 5.01) (5.03)

The village of farmers: Miyakubo district has three groups of houses in which dwell 2,850 persons. They work in the rice fields and pear orchards or cultivate strawberries. But generally speaking the farmers around a big city tend to become landowners by letting their land to commuters who build on them. The income received from such rents yields a far greater return than any cultivation will give. The sons and daughters of these farmers do not stay on the land, but prefer to work in the city.

The average acreage per agricultural family is 1.12 acres; the average for Japan as a whole is 2.02 acres.

The houses are well-designed and have good surroundings and the Shinto and Buddhist structures are artistic. (See illustrations mounted on the next page.) ^{5.04}

In setting this present plan up, I wish to keep the housing area as it now stands and make use of the green space amply provided by the shrines. I am incorporating these three villages--Miyakubo, Hirazukuri, and Soya-- which occupy about 55.7 acres--18% of the Miyakubo district.

Organization of the Plan

Ideal community planning incorporates a completely sufficient independent living unit. In Japan particularly, many unique customs have been transmitted and we should not ignore them. From past experience it is known that the recognition of the existence of the many facets of a seemingly simple tradition must be respected in the building of the new community center. In large cities, families exist as isolated units and seek study and recre-

ation where they can most easily obtain them. In a community center, the chief concern of the architect is to make a study of the existing interests as manifest through the desires of the family groups of fairly homogeneous persons.

The Japanese family system has never been replaced, although other factors brought about by modern living may have changed some old ways of life. To preserve this smallest social unit is indispensable when constructing any new form of community living. It is the core of every form of organized living in Japan, whether in the village, hamlet or town.

Residential Density and Scale:

The tremendous increase of traffic in Japan, although not accompanied with an advance in living standards, has changed residential density and scale. In designing the present plan, I have given much consideration to the fact that traffic will, in the next generation, become even greater, and must therefore be anticipated in the building of any present-day community center.

There have been many varying opinions of the ideal average density per acre. The figure of 25.6 persons per acre proposed by the authors of the article in the *Kokusai Kenchiku*¹ is not, to my mind, practical from an economic standpoint. I have consequently used a gross density of 33 persons per acre for the Miyakubo project. This figure may seem a little high, but I shall attempt to show its practicality. The table on the following page is a suggested distribution according to the Table for land use in Miyakubo.²

¹ *Kokusai Kenchiku*, a magazine, Vol. 23, May, 1956

² *Kenchiku Bunka*, Vol. 8, No. 12, December, 1953

<u>Building Site</u> 61.5%		Acres	%
Residence		153.2	55.6
Community Center		13.8	4.1
Shopping Area		4.9	1.8
<u>Traffic Area</u> 21.6%			
Road and Pedestrian		53.1	19.3
Parking Space		5.5	2.0
Plaza		0.8	0.3
Green Space		<u>33.0</u>	11.9
Total		264.3	

Structure of the Community Unit:

Within the older and larger cities space for recreation centers is difficult to find. No provision has been made in Tokyo, for example, for the children, who play on the narrow roads where many taxis and bicycles whiz by. Except for their school yards, they do not know of any other play grounds. The city is one expanse of buildings and streets with little space for recreation areas in the city proper. In residential areas, also there are few parks where the aging may sit and enjoy themselves by sunning themselves or reading the paper.

Playground for Pre-school Children: In plotting the space for Miyakubo, first consideration has been given to making the park the center of the group of buildings. The playground for pre-school children must be in a safe place. In the 50' x 80' enclosure, space is reserved for an adequately equipped playground for 40 families and green space where the mothers can watch the children while chatting with each other. If, in the future, space is needed for garages or a small meeting place, this same area can be converted to such purpose.

Other Recreational Grounds: A site 120' x 180' includes a sports area for the school children as well as a neighborhood common for 200 families, and provides for various outdoor activities.

The Neighborhood: A unique feature is the bath house around which much of the community life has centered since time immemorial. Since half the houses will not contain bathing facilities, the majority of the citizens will depend upon the public bath building. A daily bath is an absolute must in Japan. Every self-respecting person will be found at this necessary community facility at some time. For instance, in Ichikawa the public bath building is used by 638 persons on the average day. Provision for five or six shops supplied with the necessities of life can be made around a public bath area for the convenience of the users of the building. There will be no need to travel to the central area for such goods.

In this group of buildings will be included a kindergarten, a nursery, and the bath house (adequate for about 400 families.) Pedestrian space, well covered with trees, will connect the houses and the playground.

The Community: The community is made up of five neighborhoods having a population of 2000 families. A well-landscaped mall extends from east to west and invites the pedestrian to a green belt. Two elementary schools stand on the east and west side. The Junior High School, however, is situated in the center of the recreational area near the picnic grounds. -

In the central area the community building and the many shops frame the plaza and the auditorium. Through the group of shops can be glimpsed the glimmer of the pool, separating the shops from the plaza. Standing apart as a symbol of the community life is the auditorium, so constructed as to afford a pleasant view from all directions.

Circulation: In 1956, the total number of vehicles of all types in the whole of Japan reached 1,520,000--a ten-fold increase within the ten-year period. For some years to come, it is expected that the average commuter will depend upon the bus for transportation to Ichikawa and Tokyo from points in the central area. The usual congestion caused by parking and auto traffic in large cities has not yet confronted this community. The bicycle is the main means of local transportation for the individual and does not pose any problems for traffic, nor will the average citizen be able to afford a private car for some time to come.

Because of the increasing amount of traffic as indicated in the cities, provision has been made in this plan for the eventuality that parking space will be needed in the future. Space for 150 cars has been appropriated in the community center and in the residential area.

The two railroads in Ichikawa are within easy distance of Miyakubo. Commuters can travel the mile to the railroad stations either by bus or bicycle.

Residential Program

In the many studies made and reports¹ issued in Japan on housing, I have noted a lack of consideration for the problems brought about by the gradual transition of the middle class society to apartment house living. Habits of a life-time must be broken in learning to adapt oneself to the lack of space for activities which were part of the facilities afforded by living in small single homes.

It should be kept in mind that the floor area in Japan since 1945 is between 400 square feet and 540 square feet per family.² A unit of an apartment house is approximately the same. Through the use of sliding doors and paper screens (shoji) this small space can be utilized with great flexibility.

The following is a suggestion for a housing project which can be used in this community:

Type of Dwelling	No. of Families	Acreage
Single houses (900 sq. ft.)	700	87.6
Tenement houses (2-story)	450	32.0
Flats (4-story)	<u>850</u>	<u>33.6</u>
	2000	1
Total	2000	153.2
Net Density--families per acre	13.0 families	
Gross Density " " "	7.5 "	

¹ Kokusai Kentiku, Vol. 23, May, 1956

² Shinken Tiku, Vol. 30, August 1955

³ Housing Act in Japan, 1956 Ibid



MAN MADE IRRIGATION CHANNEL



RICE FIELDS BORDERING THE SITE



OVERLOOKING RICE FIELDS SOUTHWEST
OF THE SITE



HOUSES BUILT OVER FILLED IN RICE FIELDS



CLIFF ON THE WEST SIDE OF THE SITE



CENTER AREA OF THE SITE LOCATED ON
TABLE LAND



AN AGRICULTURAL HAMLET TO BE INCORPORATED
WITHIN THE SITE



A SHINTO SHRINE WITHIN THE SITE



Community

Facilities

Community Facilities

At present, leisure time is too often spent by different members of the family in scattered locations with no regard to a desirable family unity which can be brought about by a community center where all ages can enjoy its facilities in a more neighborly way. Leisure time should be the more enjoyable because it can be spent within a happy home circle. The community center can be a reflection of the extension of the living room of each family. As an architectural expression such a project is carried out through the construction of a community center which is a composite of available facilities.

In order to understand the situation in Miyakubo, it will be helpful for the reader to have explained the nature of Japanese family living. For instance, the majority of office and industrial workers who commute to Tokyo work a 44-hour week, with a half-holiday on Saturday afternoon and a full day of rest on Sunday. During week days, the men, whether married or bachelors, do not always return home when the workday is over. More often they stop in town with their fellow workers and seek some form of entertainment, such as the conviviality of the bar. There is no feeling of obligation on the part of the men to return home for the evening meal. The custom for centuries has been that the master of the house seeks out his men friends for company, leaving the wife to take care of the management of the home and the children. Only on the weekend, when he stays home, can he participate in the family activities. Therefore, the leisure time of a commuter can be construed as starting after 7 to 10 p.m. on week days and on weekends when he gets home.

The housewife does not usually go out to work. Her main job is to see that her husband and children get to the office and school on time. After devoting about two hours to her housekeeping, she passes the time by chatting to her women neighbors, reading the daily paper, listening to the radio,

until four in the afternoon. The daily shopping for groceries must then be done. It must be remembered that refrigeration has reached only the upper classes yet, and that the marketing must be done daily, before supper can be prepared.

After supper and the preparation of the next day's makings for breakfast (about 8 p.m.) comes the most enjoyable time for the family, for then the whole group has assembled.

Thanks to the widespread use of mass communication a new social pattern has resulted among the women, especially. Before marriage, a woman attends classes in modern housekeeping and other instruction in the social graces, such as flower arrangement, the tea ceremony, and sewing. These classes given privately are attended also by the married women who are interested in keeping up with the times. The integrating of these activities as a community project can be better accomplished through such a center as is proposed in this scheme.

The school hours are from 8 a.m. to 2-4 p.m. The leisure time for recreational activities, except on Saturday afternoons and Sundays is chiefly between four and seven, or until nightfall. Children do not go out after dark. Homework keeps them confined to the house.

For the present, until the standard of living changes considerably, the character of the activities governs the construction and distribution of the areas where these people will spend their time, as one may observe in the proposed plans.

On the following page is charted the table of facilities according to numbers of families as neighborhood groups:

FACILITIES IN EACH AREA

Number of Families	Community	Neighbor- hood	Sub-neighbor- hood	Sub-Sub Neighbor- hood
Number of Families	2000	400	200	50
CATEGORY				
Administration	Branch of Ward Office			
Health	Branch of Police & Fire station Small Hospital	Clinic	Doctor's office	
Education	Middle School 2 Elem. "	Kindergarten Nursery Sch.		
Recreation	Tennis Courts Swimming Pool Picnic Area Sports ground Baseball field		Playground Small Park	Small playground for Pre-school children
Social Culture	Auditorium Young People's groups Reading Room Exhibits			
Communication	Post Office			
Religion	Shinto Shrine Buddhist Temple			
Business	Shops & Offices	Shops		
Transportation	Bus Station Parking Space	Bus Stop Parking Space		
Others	Barber & Beauty	Laundry		



Building

Requirements

Building Requirements and Plan

Proposal: Man's wants can be classified in two categories: those which concern the person's daily requirements in the way of food, clothing and shelter; and those which will satisfy his desire for leisure time activities. The former can be met through better shopping facilities; the latter, better coordinated in a community building and/auditorium.

Both of these objectives are approached carefully with due thought to the good psychological influence upon the neighborhood, an influence which will make for improvement in social education.

OBJECTIVE OF THE COMMUNITY BUILDING*

Classification	For Whom Aimed	Type of Education
Cultural	All including Youth, Women, Mothers	Social, Family, Religious, Political
Library	All Readers	Current Events Statistics Library Service (Recommending good books and guidance) Exhibits Pamphlets
Meeting Halls and Lobbies	All	Lectures, Movies, Concerts
Gymnasium	All	Recreational, Sports, Folk Dancing
Social Service	All	Better living conditions Training in conducting native ceremonies Child Care Clinic Vocational and Personal Guidance

* The Design Standard by The Institution of Architecture in Japan, Vol. III, p 278 on Public Halls

OBJECTIVE OF THE COMMUNITY BUILDING

Table II*

Type of Activity	Requisite Space	Content of Activity
1. Regular Lectures	Classrooms Auditorium	Forums and speakers
2. Domestic Arts Classes	Classrooms Auditorium	Cooking, Sewing, Tea Ceremony, Flower Arrangement
3. Debates	Classrooms Lounge	
4. Movies , Color Slides	Classrooms Auditorium	Visual Education
5. Exhibits	Exhibition Hall	Exhibits of Arts and Crafts
6. Library	Catalog Room Reading Room Stack Room Administrative Office	Issuing of books, newspapers, and pamphlets; records news papers and pamphlets
7. Arts and Crafts	Work Shops Studio	Equipment for these activities
8. Music	Classrooms Auditorium	Rehearsals Musical Instruments
9. Recreation	Outdoor Sport Field Game Room Multi-Purpose Room	Athletic and Sports Apparatus
10. Committee and Group Meetings	Lounge Rooms according to size of gathering	
11. Central Information	Administrative Office	Data on facilities of community, such as clinic, nursery, and information on home industries (naishoku)

*

Ibid, Vol. III p 278, 279, 280

DESIGN PROGRAM
COMMUNITY BUILDING

	Area in Square Feet
<u>1. Cultural Department</u>	Total <u>3,470</u>
a. Three Classrooms (576 sq. ft. each) Capacity: 30 persons Kitchen for cooking classes	1,730
b. Japanese Style Room	580
c. Two Work Shops (580 sq. ft. each) Storage and Dark Room	1,160
<u>2. Library</u>	Total <u>1,630</u>
a. Adult Reading Room	860
b. Children's Reading Room Open Shelves	580
c. Storage for records	190
<u>3. Meetings</u>	Total <u>1,390</u>
a. Multi-Purpose Area Capacity: 80-100 persons For meetings, dances, stage pre- sentations Movable Stage	1,200
b. Storage Space (for chairs and equipment)	190
<u>4. Indoor Recreation</u>	Total <u>1,080</u>
a. Game Room	960
b. Japanese Game Room	575
c. Storage and Kitchenette	60
<u>5. Public and Service Areas</u>	Total <u>5,600</u>
a. Exhibition Hall	1,800
b. Lounge (Adults only) Kitchenette	1,500
c. Children's Lounge	1,500
d. Toilets	300
e. Mechanical Equipment	500

	Area in Square Feet	
	Total	1020
<u>6. Social Service Department</u>		
a. Office and Conference Room 2 persons, 1 visitor		280
b. Waiting Space		140
c. Work Room		580
d. Storage		100
<u>7. Administration</u>	Total	860
a. Office for Director		280
b. General Office		580
8. Corridor and Terrace	Total	2000

AUDITORIUM **

a. Foyer		1100
b. Lounge		580
c. Coat Room		200
d. Seating area (500 persons)		4900
e. Stage		950
f. Work Space		430
g. Green Room		300
h. Dressing Rooms Men and Woman		660
i. Lavatories		
i. Mechanical Room Storage		2500
j. Projection Booth		100

**Kenchiku Bunka, Vol. 8, No. 12, Dec. 1953
The Standards of Architectural Design I. A. J.
Ibid, Vol. III p 277ff

Administration

	Area in Square Feet
<u>1. District Police Station</u>	625
a. Office for four policemen	
b. Rest Room	
<u>2. District Ward Office</u>	Total 1250
a. General Office with Waiting Room	825
b. Adjacent Storage Room for Office	150
c. Private Office for Chief	150
d. Rest Room	125
Lavatories for Men and Women	
<u>3. Fire Station</u>	Total 2500
a. Garage	1250
b. Room for Firemen	625
c. Rest Room	625*

*The Standards of Architectural Design, I. A. J. , Vol. III
p. 87: Residence and Public Institution

Shopping Area Center

The number of shops suggested here is in proportion to the scale of the neighborhood unit and is flexible as to the actual number—varying in space with the demands of the community. To these may be added small "general stores" which are close to the residential areas for the convenience of the dwellers, and are distributed in five different sections of the neighborhood.

(See Chart on following page.)

Shopping Area*

Total Area: 30,2000 Sq. Ft.

	No. of Stores	Area in Sq. Ft.
1. Rice Merchant	2	5,000
2. Wine and Liquor	2	2,500
3. Cake and Bread Bakeries	2	2,500
4. Vegetables and Fruits	2	2,500
5. Delicatessens	2	1,875
6. Sea Food	2	1,875
7. Meat Markets	2	2,500
8. Bean Cake Shops	1	625
9. Apparel Shops and Haberdasheries	3	3,125
10. Pharmacy	1	625
11. Drug Stores	2	1,875
12. Miscellaneous Shops.	8	5,000

*Ibid Vol. III p.87 A Project for the Number of Shops and Scale of Neighborhood Units



Design Analysis

VI. DESIGN ANALYSIS

a. Plot Plan

Since the Community Center epitomizes the fulfillment of the expression of the neighborhood as defined in the philosophy of modern society, I have, in this design work, combined Japanese cultural attitudes bound by tradition with the patterns set by the modern way of life.

I am strongly convinced that the first impression created upon approaching the center should be one which satisfies the visitor's feeling of unity and harmony. Prominence is given to the auditorium, which faces a plaza. The placing of a pool by the plaza serves to accentuate the separation of the auditorium from the bustling activity of the community building and together with the space made by the plaza relieves the monotony of the area. Pedestrians coming from the north and south, as well as those approaching the parking space by car from the west, are led smoothly from the various entrances toward the group of shops and on to the community auditorium--the cynosure of the entire plan.

b. Building Plan

1. The Auditorium

The exits from the adjacent buildings as well as the walks have been constructed to draw the flow of people naturally toward the auditorium. A multi-purpose building--adaptable for movies, lectures, plays, wrestling, boxing, fashion shows, etc.--has a seating capacity of 500. However, when occasion demands, 800 can be accommodated by mechanically raising the two walls(which face each other) to a 90° angle, thus providing a temporary roof under which benches may be placed.

2. The Community Building

The space set aside for the many community activities must lend itself to the changing requirements of the times and must be suitable for all from the youngest to the oldest. Thus the building was designed simply, but with the possibility of the greatest flexibility. The two parts of the building are connected by an area 66' x 66' which is roofed but open on two sides. This area serves to separate the different activities. On one side will be a multipurpose space, for use as an exhibition hall which can also be partitioned off into many small areas for classrooms or workshops. On the other side, a library and a large lounge has been planned.

The utilitarian aspect of modern architecture may be inclined toward giving a feeling of monotony. This impression has been eliminated as much as possible here by designing the lines of the community center as aesthetically as possible.

3. The Group of Shops

Since shopkeepers are constantly competing for the buyer's patronage, not only adjacently but in competition with those in surrounding towns, much thought has been given to consumer psychology.

The community shopping facility, frequented principally by the woman of the family, usually accompanied by the children, is not, at any point, more than 15 minutes' distance away from the residential area. The space for shops is in the form of stalls, sheltered by roofs, and constructed of reinforced concrete grill. To accommodate families who come to the center for meals, a

terraced coffee shop and restaurant has been planned. A small play area lies between the market and the restaurant. The landscaped plazas present a pleasing vista from both the restaurant and the other shops. There is a bus stop at either end of the building.

Motor vehicles are excluded. A pedestrian walk runs along the front of the stores and between the buildings.

East of this section is located a parking space for 150 cars for the convenience of visitors from other communities, as well as for the people of the neighborhood.

c. Structure, Elevation and Material

In planning the dimensions for the center, a good deal of thought went into the appropriate height to keep the auditorium on a scale which would not intrude upon the onlooker's sense of the appropriate: namely, that an air of warmth and neighborliness should radiate from the building; and that this cordiality should not be destroyed by poor judgment in the matter of height. Too imposing a height would be avoided if only because it would bring out a feeling of awe, rather than a feeling of friendliness.

The exterior is of precast concrete grill and glass. The spacing of the columns of the community building has the effect of giving strength and dignity to the exterior. The walls, which can be built to suit the tenant, will stand between the center line of the inside and outside columns. The columns, in groups of four, are set four feet apart, in order to eliminate the usual problems if the module system is followed.

In order to avoid monotony for the huge space in the interior of the building, large beams are laid in a diagonal pattern.

The traditional material--wood--used so much in the older structures, was abandoned in deference to fire hazards. The impression of rigidity created by the use of reinforced concrete has been offset by detail work, as indicated in my elevation drawings. The detail work is indispensable to erase the cold feeling engendered by the bare gray surfaces which one associates with the factory-type of building. Since we wish to convey a feeling of warmth and joyfulness, which should be the emotions brought out in a community center, every effort is made to use devices to bring out that spirit.

The gradual abandoning of the use of wood is accountable: Japan's depletion of this natural resource makes the use of precast concrete grill and glass imperative.

GOAL

As an architect I am still groping for the answer to the ideal design for a community center. The goal seems beset with doubts and misgivings, but I am aware of the potential and have striven to approach what I think is my conception of a community center.

A better integration of modern society can be accomplished through such a community center as the one for Ichikawa if it will combine an appreciation of the best of Japanese traditions with the modern technique of architecture.

BIBLIOGRAPHY

- Human Activity and Nature, K. Imanishi, Mainichi Library, Tokyo, 1952
- Arts And Crafts, S. Yanagi, Bungei Shunju, Tokyo, 1942
- The Spirit of Tea Ceremony, S. Takeuchi, Ayu, Tokyo, 1949
- The Philosophy of Modern Art, Herbert Read, Meridian Books, New York, 1957
- The History of Architecture in Japan, I. Fukushima, Tetsudo Jiho,
Tokyo, 1942
- Contemporary Architecture of Japan, S. Koike, Shokokusha, Tokyo, 1954
- Collection of Architectural Drawings, A. I. J. , 1949
- Form and Space of Japanese Architecture, Norman F. Carver, Jr., Shokokusha,
Tokyo, 1955
- Specialty Shops, Kitao Harumichi, Shokokusha, Tokyo, 1954
- Modern Flat, The University Press, Glasgow, Great Britain, 1940
- Japanese Coffee Shops, Shokokusha, Tokyo, 1953
- Contemporary Shops in the United States, Emrich Nicholson, Architectural
Book Publishing Co., New York
- Encyclopedia Britannica
- Municipal Census, Ichikawa City, 1952
- Annual Statistics in Japan, Asahi Press, Tokyo, 1954
- Planning the Modern City, Vol. I & II, Harold MacLean Lewis, Corona, Tokyo
- Shops and Stores, Morris Ketchum, Progressive Architecture Library, New York

MAGAZINES

- Kokusai Kenchiku, Vol. 23, July, 1956. Planning Method of the Japan
Housing Corporation: Report for the Internation Design Conference
at Aspen, 1956
- Kokusai Kenchiku, Vol. 23, May, 1956, Bijutsu Shitsupan
Problems of Community Planning in Japan
Discussion on Housing
Problem of Standard Plan for Housing
Does Concentrated Construction Promote Productive? Y. Kaneko
Housing Nabeyama, Ueno-cho, Nagoya City, K. Ichiura
Housing Konan Hyogo Prefecture, Osaka University
Housing Seri-Yama, Osaka, G. Kume
- Architectural Review, December, 1953
- Failure of the new Density, Stephen Taylor
- Failure of the new Town, J. M. Richards

BIBLIOGRAPHY (Cont'd)

Architectural Review, July, 1953

Planning in the New Town, Gordon Cullen

Kokusai Kenchiku, Vol. 24, No. 2, February, 1957

Special Article: A new method of city construction

Heart of the City: Towards the Humanization of Urban Life. Edited by
J. Tyrwhitt, J. L. Sert, E. N. Rogers

Kenchiku Bunka, Vol. 8, No. 12, December, 1953

Community Center in Tokyo

Shinkentiku, Vol. 30, August, 1955

Japanese Architecture, 1945-1955

Housing and Town Planning in Japan, 1956, Ministry of Construction,
Japan Housing Corporation, Housing Loan Corporation

A COMMUNITY CENTER FOR ICHIKAWA JAPAN

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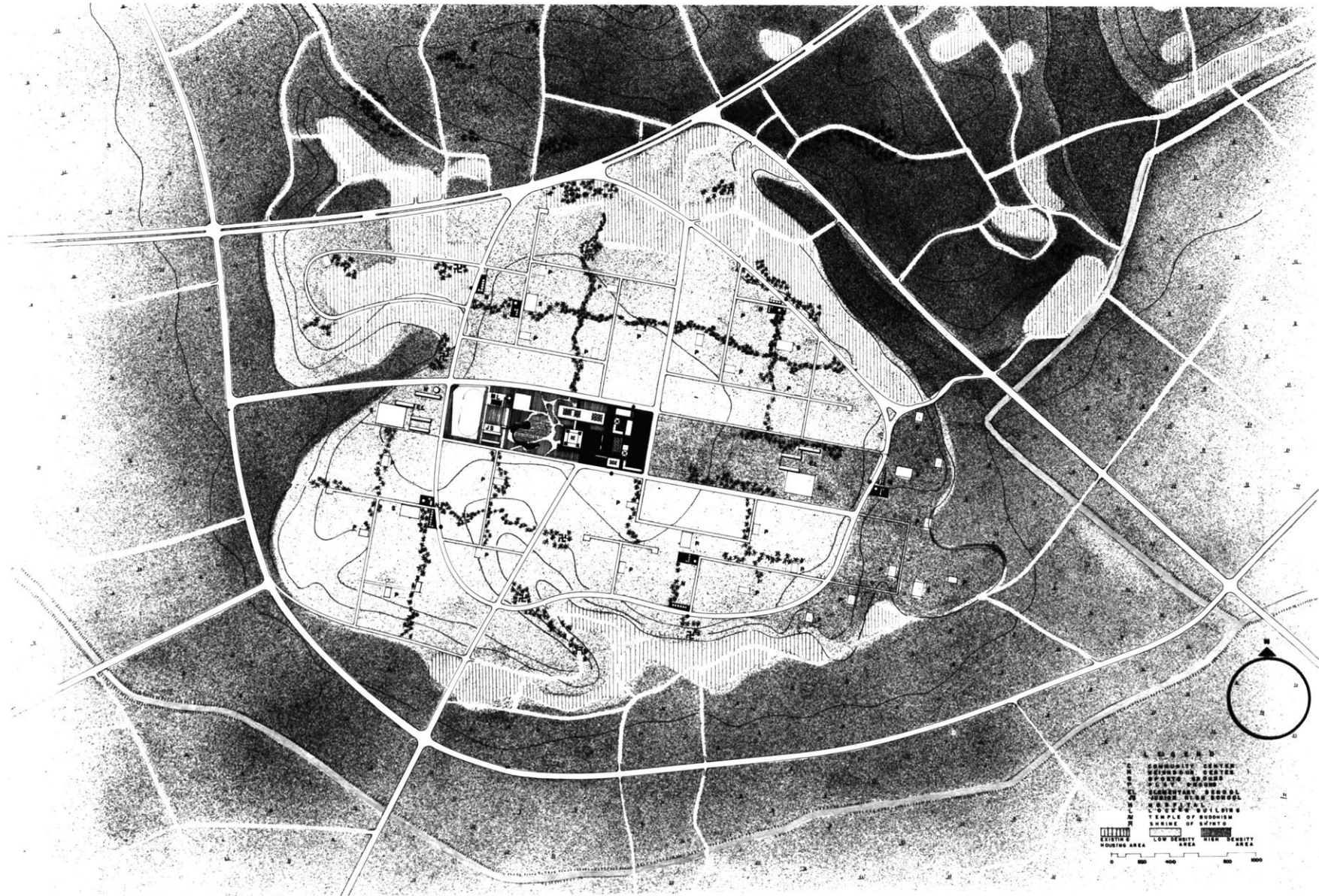
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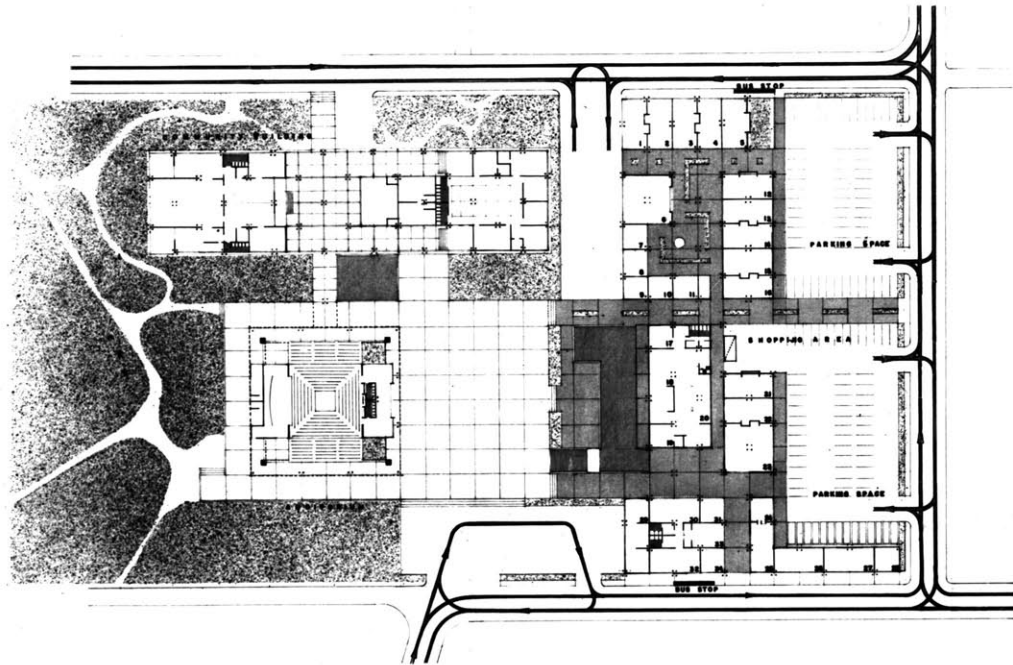




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 S SCHOOL
 P P.C.U. HOUSE
 W WASHINGTON SCHOOL
 U UNION HIGH SCHOOL
 V V.C. HOUSE
 L LITTLE CHURCH
 M MAPLE OF BUSHES
 A ARCADE OF BUSHES
 H HOUSING AREA
 LOW DENSITY HOUSING AREA
 HIGH DENSITY HOUSING AREA



COMMUNITY PLAN

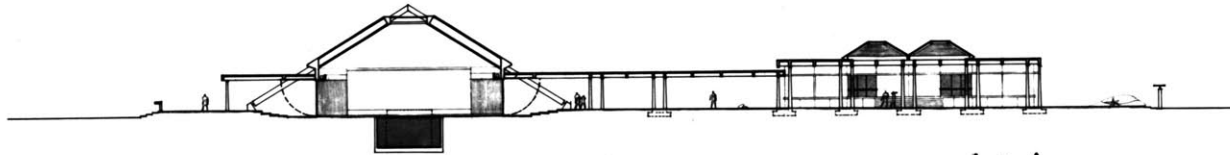


SHOPPING AREA

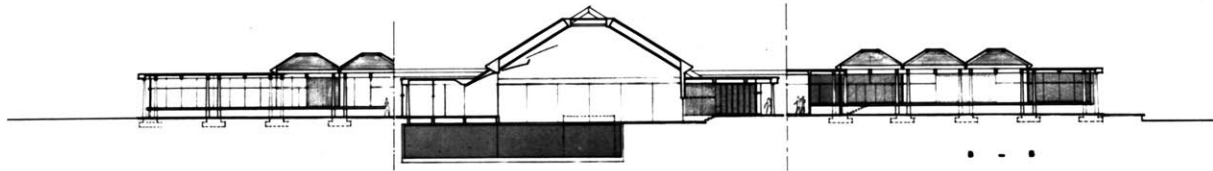
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CAKE & BREAD	12	25
VEGETABLE & FRUITS	14	21
DELICATESSA	14	25
SEA FOOD	8	20
MEAT MARKET	4	10
MEAT CASE	12	
MEW & WOMEN WEARSHOP	1	27 10
PHARMACY	7	
DRUG STORE	24	3
MISCELLANEOUS SHOPS		

ADMINISTRATION

DISTRICT POLICE STATION	22	
DISTRICT WARD OFFICE	22	
FIRE STATION	22	
POST OFFICE	22	

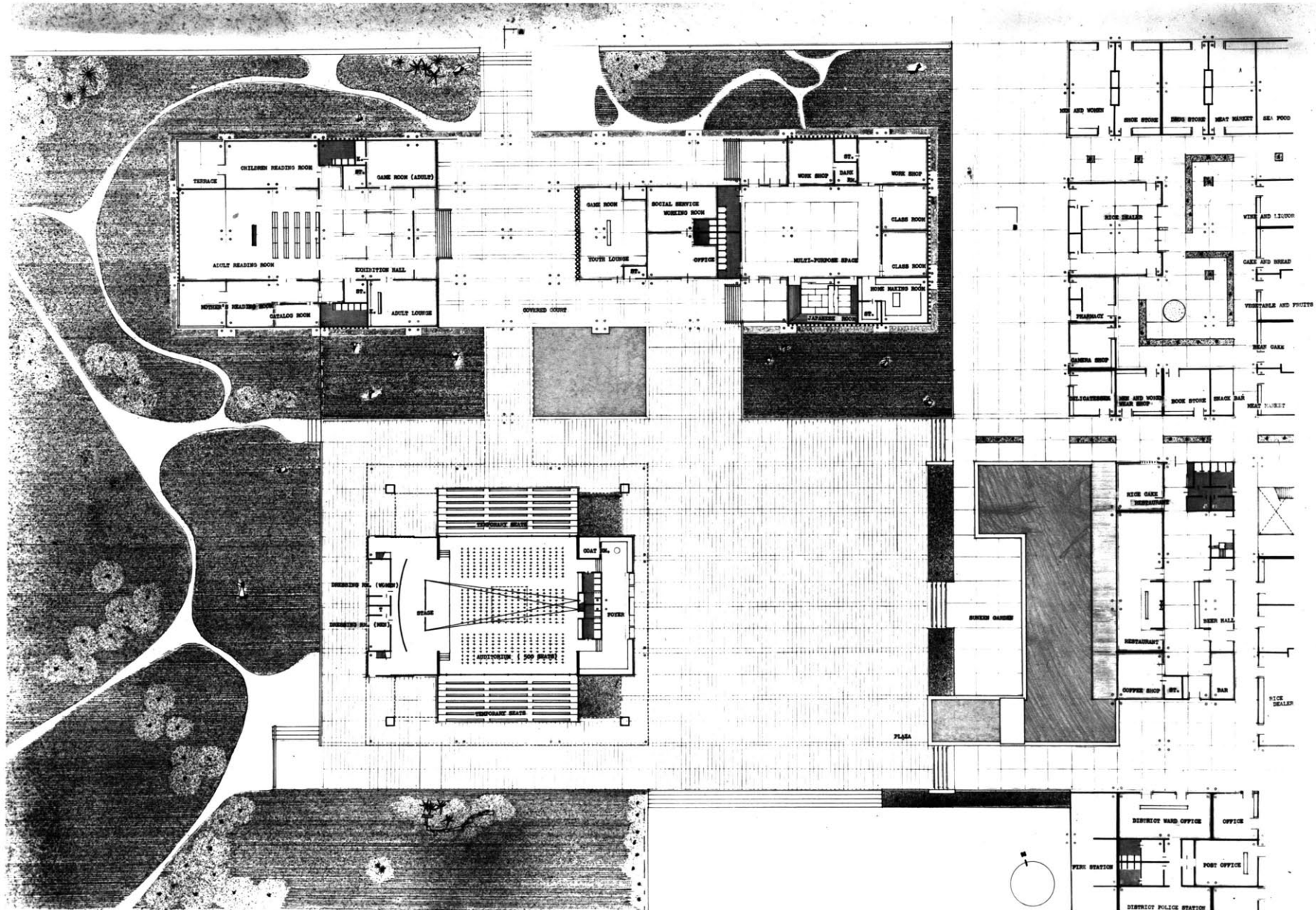


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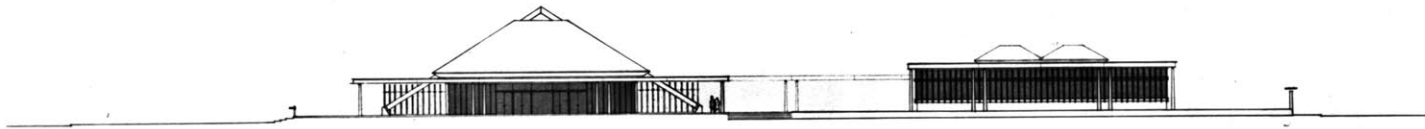
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MAIN FLOOR PLAN



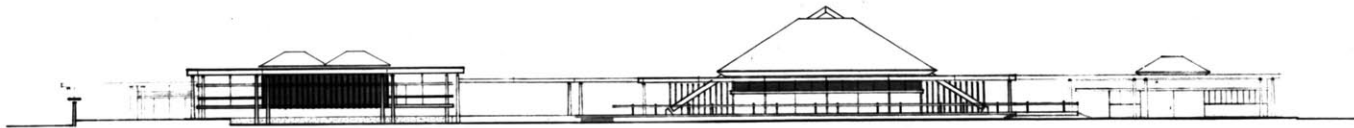
SOUTH SIDE



EAST SIDE



NORTH SIDE



WEST SIDE

ELEVATION

