

ABSTRACTS OF THE ARTICLES

SYSTEMATIZATION OF RESEARCH METHODS ON ACUTE DISRUPTIONS OF URBAN STRUCTURES AND FUNCTIONS IN EARTHQUAKE DISASTERS

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In order to systematize the research methods on acute disruptions of urban structures and functions in earthquake disasters, a model area has been established in Sakata City which has been frequently subjected to fires and earthquakes since 1600.

In Chapter 1, the historical fires are summarized, in Chapter 2 and 3, the fire damage of 1976 is discussed, and in Chapter 4, the fire damage due to the earthquake in 1896 is re-examined.

In Chapter 5, four problems for future study are mentioned: human behaviour and organizational response in disasters, restoration after disasters and the necessity of gathering and systematizing of past records of disasters.

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AN ECOLOGICAL STUDY ON THE PHYSIAL ACTIVITY OF METROPOLITAN CITIZENS

—Walking as an Exercise—

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To investigate the physical activities of urban dwellers from the ecological viewpoint, the relationship and interaction between the environment and physical activity was examined by means of various physiological and environmental measurements supplemented with a questionnaire.

As the first step, the amount of walking involved in daily life was analyzed

in terms of step-count, velocity, heart-rate, and relative metabolic rate (RMR). Road width and distance walked by the subjects, density and velocity of other pedestrians were measured at four different times a day, on a holiday and a weekday. As a result, the following points were clarified.

1) It was found that walking is affected by many factors such as the individual's physical environmental and social conditions, and that the quality and quantity of walking are influenced by the actual changes in the conditions of urban life.

2) The decrease in the amount of walking in daily life was uniformly found except for shopping. The heart-rate exceeded 100 only when more than 1000 steps were walked in continuation. This seems due to today's urban life which has been automated to save human labor.

3) Walking rather quickly over a pedestrian overpass gave an RMR 5. The maximum heart-rate was 130 per minute, whereas the systolic blood pressure increased by 40 per cent. Hence this sort of activity may be regarded as strenuous exercise for the aged and handicapped.

4) The heart-rate while walking showed an exponential relation to the crowd density when compared to the resting heart-rate.

5) The flow-coefficients and the walking velocities of the pedestrians on Ginza Street were 1.8, 2.7 km/h on a holiday, and 1.65, 3.4 km/h on a weekday, respectively.

6) The questionnaire results showed that people favored walking, but felt they did not walk enough and desired improvement in the walking environment.

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METABOLISMS OF THE CITY AND TRAFFIC FACILITIES

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The city of Tokyo is characterized as a geochemical system in relation to the transport of materials. The budget of all these materials was calculated, based on published statistical data.

The amount of the goods transported into the city by cars, train and ships, and stored and/or consumed within the city averaged 9.13×10^6 tons a year from 1969 to 1975. This corresponds to one thirty-seventh of the total standing mass of the city.

The transfer of materials within the city amounted to 9.4×10^{10} ton-km a year, corresponding to the transfer of the total standing of the man-made constructions in the city of a distance of 280 km.

The loss in materials resulting from the friction of traffic facilities such as cars and trains amounted in total to 8.4×10^3 ton a year. Losses in rubber,

iron, asbestos, copper, and resins were especially remarkable. copper, and resins were especially abundant.

These means of transportation consumed 4.8×10^{13} kcal of energy in 1973. This corresponds to 34% of the total energy consumption in Tokyo.

In addition, oxygen consumption, exhaust gases production, and disposal of metal scrap due to traffic activity are discussed.

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THE CENTER FOR URABAN STUDIES, TOKYO METROPOLITAN UNIVERSIY

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Since Tokyo Metropolitan University was established in 1949 by the authorities of the largest city in the world, hopes for an affiliated institute of urban affairs have been frequently expressed. As a first step, an inter-faculty research group was formed in 1962. It obtained a grant from the national government to publish a joint study in 1968. This group has operated on an annual grant from the metropolitan government since that year. At the same time, a special committee was named to draw up plans for a center for urban studies with a full-time staff. The plan adopted by the university in 1973, had to be cut back to a part-time staff until it was finally approved by the metropolitan government in 1977.

The Center for Urban Studies became functional in April, 1977 and consists of members from various faculties of the university including a Director and five Managing Members. It aims to perform and promote interdisciplinary urban studies with special emphasis on Tokyo from national and international perspectives. Although its activities in its starting years are limited to joint research by members and publication of three issues of its organ *Sogo Toshi Kenkyu*, (Inclusive Urban Studies), the Center is expected to broaden its organization and activities step by step.

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