

A Methodological Study on the Introduction of Co-Generation System (CGS) in Tokyo Metropolitan Region for Energy-Saving

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In this research, the method of selecting suitable areas for the introduction of Co-Generation Systems (CGS) in Tokyo Metropolitan Region is discussed. In addition, we chose 2 typical urban areas as case-study among selected areas, and did trial estimations and evaluations of the amounts of energy reduction, in multiple hypothetical scenarios for each area. As the results of our study, the following matters are clarified:

1) We studied the method of processing data with concentration on the adjacency of business district and residential district, based on the land use mesh data, and selected the suitable areas for introduction of CGS.

2) We have estimated and analyzed the amount of energy reduction for 2 case-study areas achieved by the introduction of energy-saving measures, based on the total floor area under the present conditions. We can point out that if appropriate energy-saving measures are not carried out on the basis of accurate prediction of the consumption of electricity and heat in the urban area involved, oversupply of energy and excess investment can occur.

A Study on the Urban Structural Value of the Green Space in Korea's Traditional Cities - In the Case of KyongJu and ChonJu City -

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No Abstract

Fire Spreading Simulation System for the Prevention of Disasters Planning with Open Spaces and Green Spaces under Great Earthquake: A Case Study in Kanazawa City

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In Japan, under a great earthquake, fire spreading risk is pointed out in area where wooden structures located close together. Actually, the Kobe earthquake of January in 1995, more than 100 of burning fires occurred and more than 7,000 of structures burned out. As one of measures, a plan with fire preventing districts with open spaces and green spaces is proposed. It is very attractive plan to maintain green space, especially in Kanazawa city keeping historical town, not only prevention of disaster but also landscape. But, because of missing a system to support the concrete planning, the plan is not carried out. To solve such a problem, administrator and citizen should recognize how dangerous is the earthquake in the region. For that purpose, we have developed a fire spreading simulation system with visual character, and applied the system to urban disaster preventive problem. In this paper, through a case study, we show that how the system is effective to recognize fire spreading risk, and is available to support the prevention of disaster planning with open spaces and green spaces.

An Application of Ecopolis Planning Concept for the Urban Land Use Planning of Seoul Metropolitan City

The purpose of this study was to investigate the possibility of applying ecopolis planning concept, which emphasizes environmentally sound and sustainable development, for the land use planning of Seoul Metropolitan City. Objectives of the planning were to develop urban land use plans which can save energy by increasing urban density and allocating urban land use types near to public transportation systems, to increase agricultural production capacity by restoring fertile agricultural lands, and to enhance the urban ecosystem by expanding and networking parks and green spaces of the study area.

This study had two phases. First, the land use suitability analyses for commercial, industrial, residential, agricultural, and green spaces were carried out by utilizing modeling capability of the ARC/INFO geographic information system. Second, required urban land use types were allocated based on the ESSD concept. The three most important principles were high density development, reorganization of urban structure around public transportation systems, and restoration of agricultural lands and green spaces.

Two alternative land use plans were developed for two population sizes; existing population of 11 million and 4.4 million calculated by the application of emerge theory proposed by T. Odum. The theory states that the carrying capacity of a city should be determined by the availability of natural energy and raw materials of the city. Findings of the study can be summarized as follows. First, the alternative one demonstrated that by increasing density of residential, commercial, and industrial land uses by 20% and by reorganizing urban land uses around public transportation systems, many ideals of ESSD could be realized. For example, areas unsuitable for residential areas could be restored to green space or agricultural land, excellent riparian vegetation could be restored, the present size of agricultural land of 3.58km² increased to 86.45km², and the percentage of residential areas within 1000m of subway stations increased from 43.2% to 50.2%.

Second, the alternative two demonstrated that by reducing urban density 20% and applying standard population to 4.4 million, built-up areas could be reduced to 32% of the present level, and green space and agricultural land could be expanded to 395.25km² and 101.20km², respectively. Thus dependency on environment for resource and waste disposal could be reduced only 40% of the present level, and the quality of life and urban ecosystem could be enhanced accordingly. It might be almost impossible to adopt such ideal land use plans in the near future, but these plans could serve as the target for our efforts to guide future urban development of Seoul.

The State and Possibility of the Eco-house in Japan

Reiji OBASE

The purposes of the "Eco-house" are to minimize the energy of housing construction and the maintenance process and to lower the environmental impact. The developed countries, such as Northern Europe, Germany and the United States, are promoting the sustainable development of the living environment. In Japan, we are facing an environmental boom and many Eco-house cases are being reported. The Ministry of Construction has systematized and supported "The promotion project of Eco-housing construction in 1992" and "The model project of Eco-housing area in 1993" and has promoted many projects all over Japan. First, I shall attempt to convey the state of Eco-housing, apartment houses and housing projects in Japan. Secondly, I shall attempt to clarify the system of voluntarily neighborhood participation in Eco-housing projects. Finally, I intended to analyze whether the system of the Eco-house is attracting independent participation or not. "The Eco-house" is just starting in Japan. Suppliers of Eco-houses are, if anything, attempting to implement the system of the Eco-house without residents' cooperation and voluntarily action and most residents do not necessarily evaluate the Eco-house positively. We need to study the Eco-house and have to supply the Eco-house for people who have a clear conception of the Eco-housing.

Cultural Activities and Local Development

Yi-Ling Ku & Woan-Chiau Hsing

The significance of cultural activities in leisure time is to promote and clean the human's spirit, fulfill life's immanence, and realize the life's meaning. Leisure & cultural life are necessitated for the future development of a nation and become an important social issue for further economic development. By using questionnaire survey and fieldwork in HsinChu city of Taiwan, participant behavior of cultural activities in leisure time in terms of time, space, distance, cost, and their relations with personal background are examined. The policy implications for urban planning are also discussed.