

## DESIGN PROPOSAL ON CONTROLLING THE HISTORICAL CITY BLOCKS INFLUENCED BY MID TO HIGH-RISE CONDOMINIUMS IN THE CENTRAL DISTRICTS OF KYOTO , JAPAN

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### **Preface**

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The rushing constructions of private mid to high - rise condominiums have continued in the historical center in Kyoto City, Japan. Here, The central districts are limited by the Kamogawa River to the east, the Horikawa Street to the west, the Shijyo Street to the south and the Marutamachi Street to the north. It covers an area of 144 ha approximately.

According to the data of the City Office, the number of constructions of such kind of condominiums amounts 261 during 15 years since 1985, and the ratio of more than 9 storied buildings is getting larger year by year. The site sizes of those condominiums center around 200 - 399 square meters, which implies that they were constructed in the same areas as a single or a couple of Machiya sites. They are influencing on the surrounding living environments from the viewing point of sunshine, ventilation and oppression. In the case they are constructed neighboring to each other, they may mutually have the same environmental problems like those.

### **Consideration of Machiya's features**

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I would like to propose a new aspect to evaluate the space design of Machiya, which means the typical wooden framed city house inherited for a long time since 16th century in Kyoto. The almost former explanations about the characteristics of Machiya can be divided in two groups. One is that mainly explains architectural features from the side of building, and the other is that mentions conspicuous points of designing gardens picking up small inner courtyards called Tsuboniwa as available samples. Unfortunately we cannot find out the opinions which tries to confirm the space combinations between the inside space and outside of building. Therefore, it is not clarified that when the courtyard had positioned in the Machiya's housing compositions and how the relations between courtyard layouts and the site planning. This point is concerning with understanding and evaluating the cultural features of traditional layout of Machiya, which should be

reconsidered for the forthcoming conservation of historical center of Kyoto.

Concerning the Machiya's space layout, I would like to point out two aspects. The first is when the backyard of Machiya had positioned in its layout. It can be supposed the backyard had arisen according the urbanization of urban blocks since the beginning of 16th century. We can find this fact in the ancient folding screen called Byobu and other literatures also like the old Noh farce. It means the communal land located in the central part of urban blocks since the 8th century had started to be contained in the sites of Machiya privately. This means the origin of backyard of Machiya.

The second is what the layout planning idea had originated from. As far as my research is concerned, that idea had come from the concept of stagger layout used and completed in designing the imperial detached palace, the Katsura Rikyu, which had been completed by the 17th century, the beginning of the Edo era. Therefore, the Machiya's plan is considered to be a variation of stagger layout. The Katsura Rikyu was designed for each room to confront the each courtyard in the outer surrounding garden, and is considered to be a symbolical position in the traditional buildings using the stagger style. In the same meaning, the main rooms of Machiya are faced not only to the backyards but the Tsuboniwas on the strictly limited site located in the urban block. The stagger layout principle adapted to the imperial detached palace had to be deformed to adjust to the narrow private land in the case of the city houses inhabited by the ordinary people.

Not only the formal but also informal ways to harmonize the inner space with the outer in the site planning have been introduced to Machiya design. The backyards and Tsuboniwas function to take the daylight into the inner spaces and ventilate rooms. These courtyards are also the objectives that people have intended to give aesthetic and spiritual meanings for a long time. According to my idea, it is supposed the skillful harmonization existing in Machiya had matured by the middle of 17th century.

For that reason, the inhabitants must lose the tradition of Machiya's planning principle derived from the stagger layout, when Machiya housings are demolished. And the cultural relationship between their inner and outer spaces must be disordered or destroyed if the high rise buildings like condominiums are constructed adjacent to the Machiya's sites. It means the catastrophe on the housing traditions inherited in the living ways of ancestors for more than 500 years. It must be reconsidered in what way the Machiya and new building developments can be harmonized in the historical center.

### **Attitudes of inhabitants in both condominium and its surroundings**

The central districts consist of two types of city block pattern. One is square and the other is rectangular. They have contained the traditional Machiyas till recent years. But those sites of city houses have been decreasing of their demolition and replacement to private mid to high - rise condominiums mainly.

First, it is mentioned that what are the characteristics of results of questionnaires asking inhabitants of environmental conditions who live at the places neighboring directly or indirectly high rise - condominiums both in a square and rectangular urban blocks selected according to a certain criteria set by the way of conducting the research procedure. The questionnaires resulted in getting 67 answers covering 52.3% of inhabitants. The questions were conducted in 2000. It must be insisted that 74.6% of them have some environmental problems influenced by mid to high rise condominiums, as destruction of Kyoto like townscapes(53.8%), uneasiness on indistinguishableness of persons living in those buildings(43.8%), worseness of the taking sunlight and privacy intrusion by peeping down at Machiya's backyards(35.8%). Definitely 70.1% of answers tell that they don't want to live in such kind of condominiums. The fact that most of the inhabitants indicate the negative attitudes to lives in buildings like those must have some backgrounds. The inclinations of answers must have been influenced by their direct or indirect experiences of facing to the problems.

Now it is introduced that the inhabitants who live in the rectangular urban block made an agreement that intends to protect their living environments from the aggression by the developing movements of the condominium. It covers 90% of people including plural communities, declaring to protect low to mid - rise building townscape, to keep the building height less than 15 meters and to cherish their relationship of neighborhood toward mutual supports in daily lives. Other

communities in the historical districts also made such kind of agreements.

On the contrary, there are deep gaps between the agreements and the designated town planning limitations. For example, the agreement claims 15 meters as the height regulation, but the town planning which city government has adapted to those districts designates 31 meters till nowadays. Therefore, it must be inevitable to reconsider quickly the designated regulations on those districts that have serious problems caused by the constructions of mid to high - rise condominiums in order to improvement the living conditions. In this case, not only the height limitation but also land use planning and bulk ratio of building must be picked up in reconsideration. Furthermore, it should be noticed the movements of making agreements adopted by communities need to readjust the respective limitations and to make another town planning policies for the urban block design. Because the inhabitants' movements based on communities become to have close physical contacts with one another in the same block.

Second, it is mentioned what are the features of results of questionnaires conducted to the inhabitants in mid to high - rise condominiums selected by a certain criteria which are needed to sample some buildings. The questionnaires resulted in getting 94 answers covering 25.6% of inhabitants. The questions were also conducted in 2000. The percentage of aged families is 20% (more than 65 years old if a single, wife or husband is more than 65 if in a couple). Young to middle aged families (a member of family is more than 35 less than 65, in any case, and including other criteria) cover 51%, and single families with children (the eldest child is less than 12 years old, and including other criteria) cover 24% respectively. Those data show the recent tendency of then age composition of inhabitants living in the central districts. It should be noticed that not only aged families but also the young to middle are apt to select condominiums as their preferable living places.

When they preferred the central districts for living places, they evaluated the convenience for daily lives (66%), conventional living feeling due to their former habitations in the central districts (44%), and good commuting traffic conditions (36%). The inhabitants are apt to choose the apartment style because of the decency of house layout (47%), reasonable house price and ease coming from automatic locking systems (both 38%). They preferred the condominiums on the counterbalance of living convenience and house price.

Finally, it should be noticed the inhabitants regard some physical and social surroundings of houses as desirable

environments. They have appreciated the quiet places like sites of the ancient Imperial Palace, shrines or the Kamogawa River as the open spaces maintaining the nature. The existing communities, low storied townscapes and historical estates are recognized important and significant living conditions by themselves. And they think environmental stocks consist of schools, cultural facilities for children and museums etc. also, including places mentioned above. But unfortunately, present condominium developments are confronting the contradictions that such constructions cause the destruction on the environmental stocks. Therefore, it must be important to look for a new type of apartment housing from both physical and social aspects, which will be able to accept new comers without the destruction of environmental stocks.

### **Mechanism of land use change of city block**

Here, it is explained what are the environmental problems influenced by the mid to high - rise condominiums in the city blocks. Recently, the astonishing facts have been observed in the condominium developments. The demolishing those small alleys has occurred incidental to the developments. The alleys support the people's lives and they are important parts of daily living spaces. But recent developments spoiled the importance of inner living spaces, and are apt to convert the traditional land use order that has been based on inhabitants' communities to the land price system that provide the highest price on the land facing the street.

As far as the square city block we picked out is concerned, the real circumstances we observed are very serious. The block contains a single small alley that is necessary for the inhabitants living in inner spaces of the block to continue their lives. In this city block referred to here, first of all, Machiyas have disappeared rapidly and only small amount of Machiya's sites have been left in the central part of the block. It might be said this city block situation means the definite phase of changing townscape, so that low storied houses must be rejected from this block in the near future. How can it be explained?

This city block has the typical square shape consisting of the historical center, included in the commercial use area where 400% bulk ratio and 31 meters height limitations are used by the City Government town planning. The building developments represented by the high - rise condominiums mainly have tended to use spaces in the maximum limits that are admitted by the city planning. Especially recent developments erected 6 to 10 storied condominiums of which number amounts 3 buildings in the 124 by 123 meters

square block. Consequently, those tall buildings have so seriously influenced on the low storied wooden framed Machiyas that they could not stand in the deteriorated environments. Actually, the living functions in the alley houses surely decreased because of the changes of conditions to take sunlight, to ventilate inner rooms and to protect the privacy of the inhabitants. When the high - rise condominium was neighboring another condominium in the eastern side of the former, the view from the dwelling units of the former toward the Higashiyama mountain silhouette was inevitably lost. Thus the outer environmental conditions of mid to high - rise condominiums will be changed definitely by their crowded constructions. The building rules are not provided on the city blocks previously. Under this present condition, it cannot be avoided the outer space situations will become worse.

In a word, the high - rise condominiums were constructed randomly neighboring one another in this block. The living space units supported by the low storied Machiyas existing in it are in danger of corruption. It implies there will be no possibility for living spaces except high - rise apartments houses to be left in the block. It must be mentioned this undesirable phenomena have spread on the historical center since 1980s.

### **Toward the design control**

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Thus there are very serious competitions among the architectural activities. It means the contradictions lie between housing and non - housing land uses on the city blocks. And it is confirmed that the living environments surrounding the former low storied housings consisted of Machiyas are apt to be damaged by mid to high - rise condominiums even in the districts controlled under the housing land use rules. According to the questionnaires, it is clear that the inhabitants of tall condominiums have a tendency to give priority to the living convenience in the historical center, the decency of house layout and the reasonable house price, which are the specialized functions of condominiums now provided. Unexpectedly, the inhabitants' consciousness of good conditions for viewing is not so stronger compared with the specialized functions mentioned above. If that fact is taken into consideration, low to mid - rise apartment houses have possibility to be accepted by inhabitants because they do not always want to live in high - rise buildings. On this occasion, that type of housing must meet the specialized functions preferred by the present inhabitants.

One of the preferable functions of inhabitants is concerning the reasonable housing price. Under the present economical mechanism, it cannot be denied that constructing

the high - rise condominium might reduce comparatively the expensive housing price which is basically influence by land price system. But, the harmony in townscape and the co - existence with inner living spaces in city blocks must be regarded as the additional values, which should contribute to providing new types of housings for central districts standing on the long ranged aspect.

According to another report carried out by author's group in 2004, the opportunities for mutual communications between both inhabitants living in the condominiums and in the surroundings are very weak in central districts. Unfortunately, most of the high - rise condominiums have been constructed without agreements with construction companies and inhabitants. Inevitably, they have caused the environmental problems on surroundings. Those problems are concerning the excessive building height first, and other physical forms second. Those physical forms that introduced the environmental damages make so serious influences on the inhabitants' minds that they have negative feelings to both building and its dwellers. The number of housing units contained in those tall buildings is excessively enormous compared with the formerly existing houses in the community. It means those buildings burden the inhabitants with heavy tasks which might exceed their traditional community management abilities.

It must be considered that how both inhabitants of condominiums and surroundings can make communal exchanges based on the same community. In order to find out the way to make the mutual communication promoted toward the future, the report indicates that the careful consideration on physical design, reduction of number of housing units and agreement of inhabitants living in surroundings are needed.

The traditional Machiyas face to the city streets and their sites have rectangular forms. Each of them has a backyard and small courtyards Tsuboniwa inside the site. The rooms located to the backyard of Machiya have the important position in all spaces because they are usually used for daily family life and guest invitation. On the contrary, the rooms on the side of city streets are ordinarily used for business. The layout pattern has the origin from stagger style formerly adapted to Katsura Rikyu. It must be emphasized that the layout pattern is now having the cultural meanings kept by inhabitants for a long time. A group of Machiyas is significant as the small unit for living space. Protecting the small unit is seriously needed for architectural and town planning design on the traditional city blocks. First, the down zoning is needed over the whole historical districts that are controlled under the 400% bulk ratio and 31 to 45 meters height regulations. According to the author's

opinion, bulk ratio has to be reduced to 200%, and the height regulation must be less than 15 meters.

New type of apartment houses should be designed to keep the modest unit number size, which must be 10 - 30 units contained in a single building. It is admitted that the building height of part on the street side come to 15 meters, but on the opposite side the level should be less than 6 meters high. Because the space of central part in city block must provide environmental conditions in order to support inhabitants' daily lives in Machiya. That number size of housing unit will have the possibility to be accepted to the former communities.

In the historical districts, non - housing building activities have to be subjected to the rules so that those continuous experiences will make more excellent physical harmony with the historical townscapes.

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### Abstract

This paper reports the rushing constructions of private mid - to - high rise condominiums have caused the environmental influences on city blocks located in the central districts of Kyoto. It insists they are observed destructive to both townscapes of the streets and housing groups inside the historical blocks.

The central districts consist of two kinds of city block patterns. One is square and the other is rectangular. They have contained traditional wooden framed city houses till recent years.

On the contrary, those sites of city houses have been decreasing because of their demolition and replacement to private mid - to - high rise condominiums mainly. But those city blocks have corresponded to the systematically grouped city houses. It must be noticed that the site layout plan of city house in the central districts inherits some culturally and practically important features characterized by the skilful combination of inner space of house with courtyard.

First, this report mentions that the recent private developments have brought some destructive disorders in the traditional city block systems that should be preserved in order to survive city houses. Second, considering the results of questionnaires to the inhabitants and neighbors, it suggests some basic ideas that control those constructing activities in harmony with living spaces within a typical city block.