

**An education of the urban tissue
design studio to reorganize
the urban environments
in downtown Tokyo
- A case study of
the Shimbashi areas of Tokyo -**

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ABSTRACT AND KEYWORDS

The author has been teaching at the urban tissue design studio for the fourth grade of the undergraduate students for these three years. Each group of four students first surveyed and analyzed the existing theme of the areas along the new city planning road "Ring Route 2", also known as MacArthur Road, in the Shimbashi - Toranomom district of Minato-ku, Tokyo and made design guidelines that embody aesthetic urban planning and environmental design. Each student design individually according to the design guidelines drafted by themselves and the effectiveness of the guidelines will be tested by using them in a schematic design. The students have learned the Open Building theory in their third grade, which means one year prior to this studio work. This studio gives them the opportunities to implement their knowledge in the field which they well know.

Keywords:

Urban tissue, Design method, Urban environment, Existing building stock, Public spaces

1.1 OUTLINE OF THE DESIGN STUDIO

The author has been teaching the urban tissue design studio for the fourth grade of the undergraduate students for these three years. The students first survey and analyze the existing theme of the areas along the city planning road "Ring Route 2", also known as MacArthur Road, in the Shimbashi - Toranomon district of Minato-ku, Tokyo and make a district plan and design guidelines that embody aesthetic urban planning and environmental design. The aim of the studio is to learn a design method for reorganizing an existing urban environment by unifying the architecture, city planning, civil engineering and landscape design. Design guidelines for the area will be drafted and their effectiveness will be tested by using them in a schematic design.

During the course of this studio, students were encouraged to interview local government representatives, university researchers and people who live and work in the area to obtain a variety of opinions for the urban redevelopment. Also the result of the students' studies was presented to the landowners of the districts for the discussion among student and local people.

The Shimbashi - Toranomon district, which is located between the Kasumigaseki governmental district and the Shiodome business district in Tokyo, is expected to become a new business zone after the completion of a new city planning road. The students analyze the future potential of this area for business and residential functions by making the three-dimensional perspective views and models of the blocks that show the various alternatives for future city spaces.

The author has taught the students the Open Building theory in their third grade, which means one year prior to this studio work. This studio gives them the opportunities to implement their knowledge and to deepen their understanding of the Open Building theory.

1.1.1 Purpose and background of the studio

The economic growth that occurred in Japan after the end of World War II has led to the emergence of cityscapes dominated by huge high-rise buildings, but often without beautiful scenery and community spaces. This

is because architecture, city planning, civil engineering and landscape design have become too specialized and there has been no integrated, holistic approach to the design of urban environments. The students were encouraged to study the areas along the city planning road “Ring Route 2”, also known as the MacArthur Road, in the Shimbashi - Toranomon district of Minato-ku, Tokyo, in an effort to draft a district plan and design guidelines that embody aesthetic urban planning and environmental design (Fig.1).

It has been common for the areas adjacent to a new city planning road to be developed haphazardly without any coordination between architectural design and civil engineering design, with the inevitable result of inferior public spaces and greenery. By reflecting on conventional environmental design, the students were required to establish a design method for reorganizing an existing urban environment by unifying the architecture, city planning, civil engineering and landscape design.

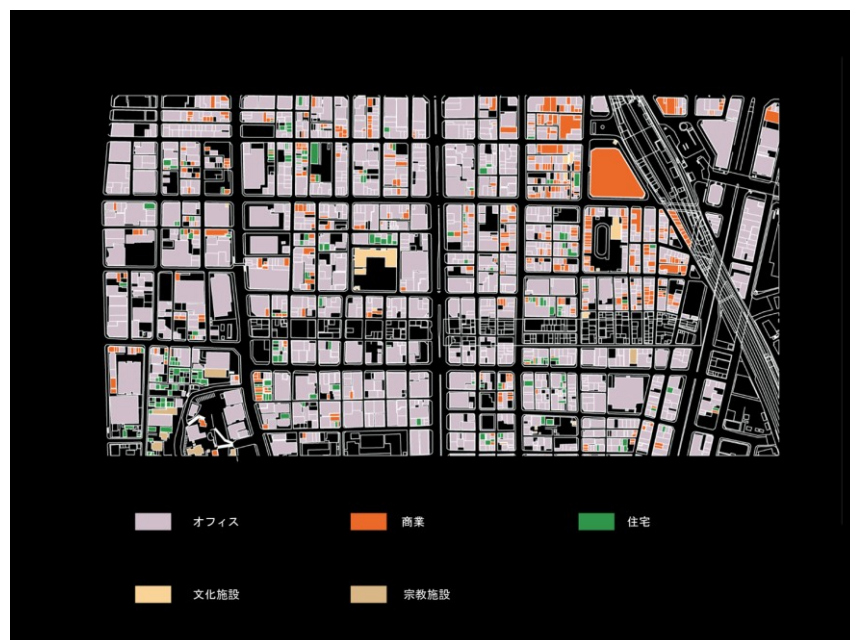


Figure 1.1 Present land use in Shimbashi

The aims of the studio are to obtain the knowledge and skills in the following areas:

- (1) The design method based on the shared theme of the blocks.

- (2) The design of long life buildings which will be a part of the social infrastructure.
- (3) The reconstruction of the urban environment based on the local geography, ecology, history and culture to meet the future needs of the area.
- (4) The renovation and activation of the existing building stocks and public spaces.
- (5) The relationship between architectural design, city planning, civil engineering and landscape design.

Based on the knowledge and skills mentioned above, the students were expected to design sustainable buildings and city spaces which will be suitable for a carbon free society in the future.

1.1.2 Guidelines to be used for each building design

Each group of students first surveyed and analyzed the existing theme of the areas along the new city planning road "Ring Route 2", also known as MacArthur Road, in the Shimbashi - Toranomom district of Minato-ku, Tokyo. They drafted design guidelines that embody aesthetic urban planning and environmental design for the two blocks which they selected for their design works. Each student individually designed a building according to the design guidelines drafted by themselves. The effectiveness of the guidelines was tested by using them in a schematic design. The students were required to decide by themselves the most suitable size and use of the building for each site.

The rules that could be set for the design guidelines are as follows:

- 1) Rules for buildings
 - A. Rules for external wall easements
Ex. Along MacArthur Road: Walls may be no more than 6.0m high and must be set at least 1.0m away from the roadside, or at least 3.0m away when the ground level is used as a pedestrian arcade.
 - B. Maximum building height:
Ex. The maximum height of buildings should be no more than 30m to maintain harmony with existing neighbouring buildings.
 - C. Building use:
Ex. Commercial uses are recommended for the lower floors of buildings facing MacArthur Road and offices and/or residential uses for the middle and upper floors.
 - D. Position of doorways of buildings:
Ex. The doorways of houses should be located away from the main street to secure privacy and security.
- 2) Rules for the street space
 - A. Create an active margin:

- Ex. The spaces of the lower part of buildings along the pedestrian walkway will be used for creating turnout, such as with open air cafés.
- B. Create a vibrant atmosphere for the pedestrian walkway
- C. Plants and street furniture:
 - Ex. Arrange rows of plants within 5m of the roadside at each site. Install street furniture along the street.
- 3) Other Rules
 - A. Underground parking network:
 - Ex. Connect the underground parking areas in this area in order to facilitate the road traffic on the ground level and reduce on-street parking.
 - B. Restrictions on signboards:
 - Ex. Neither roof signboards nor overhanging signboards should be installed along MacArthur Road.
 - C. Walls, fences, gates and signboards which may obstruct traffic and block out the cityscape should be restricted.

1.2 STUDENT'S WORKS

In 2008, more than 70 students took this design studio. The author introduces some of the best examples of their works below.

1.2.1 Students' Works-A: Pedestrian walkway covered by trees

The students established a design guideline that requires for each building to have a bridge to connect building and the pedestrian walkway in the middle of MacArthur Road. The Tokyo Metropolitan Government design of MacArthur Road on the other hand has wide traffic lanes in its centre. Students proposed to make the road into a pedestrian walkway covered by trees. The author will show the students' proposal to the government in the near future.

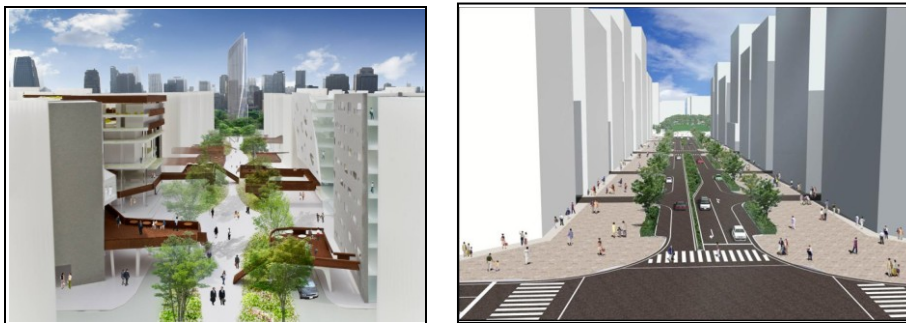


Figure 1.2 and 1.3 Students' design (left) and the design of the Tokyo Metropolitan Government (right)

1.2.2 Students' Works-B: The control to the facade

Most of the students established design guidelines for the buildings along MacArthur Road which control the building height and the dimension of the setback of each building from the road. They often suggested the ground floor and the first floor of the buildings should be used for commercial uses to make the street livelier, the middle part of them should be used for offices and the upper part should be used for residential use to allow people to live in the city. By giving a freedom of design within the shared design guideline, the students have learned how to design a rich built environment which has variety and uniformity at the same time. The author has been trying to teach the Open Building theory in a practical and easily comprehensible way in this studio, without using the technical terms of the Open Building theory. Students learned the theory through practice.



Figure 1.4 – 1.7 Examples of the façade design by the students

1.2.3 Students' Works-C: Acupuncture the existing building stocks to activate the city

Some students realized the importance of activating the existing building stocks in the back of the newly built MacArthur Road. A group of four students selected the four most important buildings around a square just behind MacArthur Road and rebuilt them into new buildings which make this area more active than present.

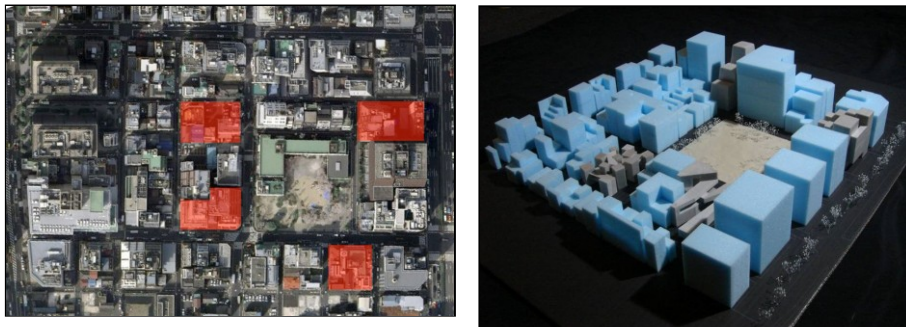


Figure 1.8 and 1.9 Proposal for the backs behind the MacArthur Road

1.3 CONCLUSIONS

The students studied the geographical and historical characteristics of the areas and analyzed the historical development process before they started their design works. They also investigated the present situation of building stocks through fieldwork to find suitable buildings for reuse and conversion. The design guidelines for the area were drafted and their effectiveness was tested by using them in the schematic design.

This design studio tried to remind the students the importance of the shared theme in the design of city architecture. The students drafted the guidelines by themselves and tested them in their individual design work. They were able to understand the relationship between the shared agreements for the urban design and the individual building design. Some students became frustrated because it was not easy to find agreeable guidelines between the team members or the design guideline which they drafted did not control the design of each building very well.

The Open Building theory has been questioning the relationship between the urban tissue design and building design. This theory has also been considering how architects can work together by sharing themes of the urban tissue. Professor Nicolas John Habraken investigated this topic through the "Grunsfeld Variation" workshop while he was teaching at MIT. The design studio in which the author was enrolled was for the under

graduate students and the period of time for the students to work was only two months. While realizing this studio required many improvements, the author believes it offered a lot for the students to learn, especially for acquiring a better way of designing a contemporary built environment.

1.4 REFERENCES

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