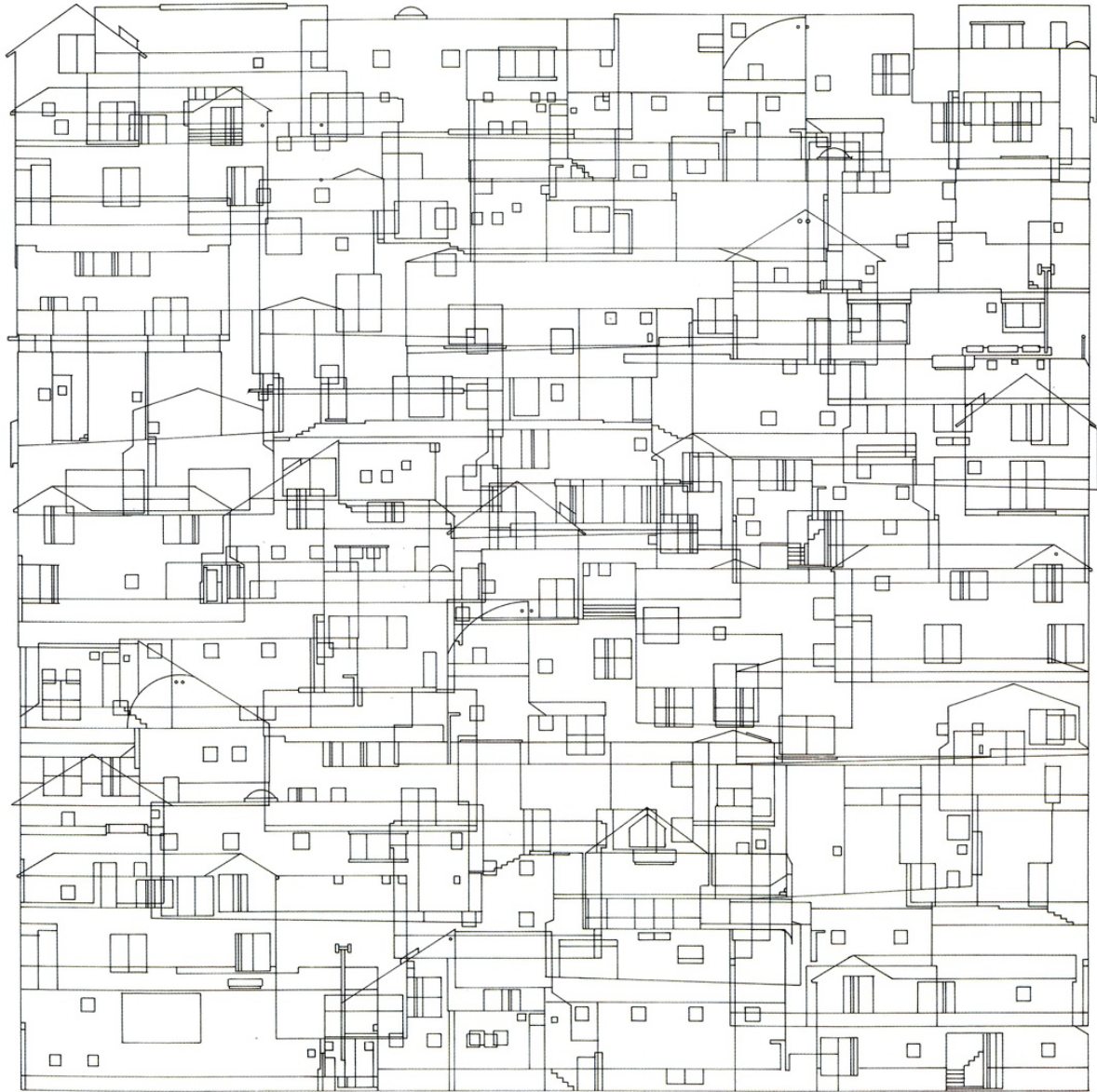


Learning from Tokyo for more than 1 million people living in Switzerland

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To challenge the hypothesis that the population of Switzerland can be increased by a million people without destroying existing buildings, the Chair of Architectural Behaviorology (CAB) proposes to learn about housing design techniques and living in the densely populated 23 wards of Tokyo and to try this out in Switzerland. The students are asked to propose a project within a chosen scenario based on the three keys: minimum, floor, and window. The CAB will include (1) literature on high-density living in Tokyo, (2) lectures by Japanese architects on high-density living in Tokyo, and (3) Discussions with Japanese architects.

Scenarios

1 – High density

With a population of 8.77 million people on a Swiss land area of 41'285 km², the population density is 213 persons/km², while the population density on the plains is 709 persons/km², taking into account that 70 percent of the Swiss land area is in mountainous regions. In contrast, when the projected increase of one million people is spread evenly over Switzerland, the population density is 242 persons/km², and the population density of the plains is 807 persons/km². The population density of Zurich is 4'584 persons/km², considering that the population of the 88 km² land area in Zurich is 400'000 people. If one million people were concentrated in Zurich, the population density would be 15'963 persons/km², which is approximately the same as the 23 wards of Tokyo (land area 622 km², population 9.79 million people, population density 15'745 persons/km²).²

2 – Adequate living area for one person
The living area for one person in Switzerland is 45 m² for a person for single living and 31 m² for a person living in multiple members families, compared with 44.9 m² for one person in Zurich. The living area for one person in Tokyo is 25 m², compared to 15-20 m² in the 23 wards. If the living area for one person in Tokyo is appropriate, double the population density in Zurich would mean that twice as many people would live in the current housing area.

3 – Relaxation of restrictions on site area division, building setback distances from site boundaries and height restrictions

In Switzerland, there are restrictions on minimum site areas (e.g. 200 m², 1000 m²), setback distances from site boundaries (3.5 +) and building heights. In Tokyo, due to land divisions dating from the Edo period, the land area was often less than 100 m². The Civil Code guides 50 cm in terms of the setback distance from the site boundary, but customary practice is applied. Building heights are limited to 10-12 m in low-rise residential areas, but have been relaxed for medium- and high-rise buildings, and since 2002, large-scale development has been carried out under the Law on Special Measures for Urban Revitalisation.

Three keys

1 – minimum

In the run-up to World War II reconstruction, the financially strapped Japanese Government erected three pillars. One of these was the Housing Loan Corporation Act of 1950, which established a public finance corporation with a house area of no more than 100 m² and a low-interest rate of 5.5% to borrow funds for the construction of detached private housing. As this application required a confirmation application by an architect, many architects worked on the design. Design competitions were held in architectural magazines and other publications, and Yo Ikebe's 'Residence No. 3' (1950) and Makoto Masuzawa's 'Minimal Residence (own residence)' (1952) were published.

2 – floors

In the Swiss house, people lived by placing furniture such as storage, beds, chairs and dining tables in their rooms. In contrast, the Japanese traditional house had a raised floor of 30-45 cm, on which people took off their shoes and sat directly on the floor. The floor was a space like a large piece of furniture. In the 1990s, the demand for urban high-density housing led architects such as Atelier Bow-Wow to develop houses with three-dimensional floors, such as the skipped floor.

3 – windows

Switzerland is influenced by an arctic climate from the north, a Mediterranean climate from the south, an Atlantic oceanic climate from the west, and a continental climate from the east. The differences in altitude from the plains to the mountains create a complex and diverse climate. Tokyo has a warm temperate climate, with four warm but distinct seasons, which require a way of living adapted to these seasons. Windows are tools for regulating the environment, and in high-density environments, they are an important element in creating a sense of openness and other relationships with the outside.

Bibliography

Shinkenichiku Data, <https://data.shinkenichiku.online/en>
JA43, Small Japan Architect, 2001
Atelier Bow-Wow, Graphic Anatomy, Toto publishing, 2007
Atelier Bow-Wow, A Primer, Verlag der Buchhandlung Walther König, 2013
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Description of preparation and elaboration phase in key-words

For the design project's target, each student is expected to select and collect data on existing housing and its context as well as a matching Japanese example. The collected data and chosen scenario to be addressed during the master's thesis should be presented on the first day of class. The Reviews and weekly critiques are held on Monday. The students will be evaluated on four submissions: two submissions during the preparation phase and two submissions during the elaboration phase.

CAB	– Actor-Network Drawing – Architectural Behaviorology – Construction – Design for Density
JS 2	– Analysis of Japanese design for density (plan, section, model 1:20) > preparation phase – Proposal unit design for density (model 1:10–1:20) > elaboration Phase

Schedule and expected outcomes

Preparation	W1	Start of MT: August 26 – Orientation Theme Discussion
	W2	Desk Critique + <i>Lecture</i>
	W3	1st Mid Review (Draft area AND, scenario, analysis of Japanese design)
	W4	Desk Critique + <i>Lecture</i>
	W5	Desk Critique + <i>Lecture</i>
	W6	Desk Critique + <i>Lecture</i>
	W7	2nd Mid Review (Area AND, scenario, analysis of Japanese design)
End / Start Elaboration	W8	Desk Critique Colloquium: October 15
	W9	Seminar Week
	W10	Desk Critique
	W11	Desk Critique
	W12	3rd Mid Review (Project AND, plans, model of proposal unit)
	W13	Desk Critique
	W14	Desk Critique
	W15	Desk Critique
	W16	Submission: December 13, 18.30 h
	W17	Final Review (Area + project AND, scenario, text, plans, model of proposal unit) Colloquium: December 16

Ratio of grading by cooperation partners

Preparation	40% – 1st Mid Review 10% / 2nd Mid Review 30%
	Partner 1: 70%
	Partner 2: 30%
Elaboration	60% – 3rd Mid Review 30% / Final Review 30%
	Partner 1: 70%
	Partner 2: 30%