

Color Planning and Evaluation of University of Tsukuba Overseas Student Dormitories

Rie Komatsuzaki,¹ Yi Zhuang,² Mahshid Baniani,² Sari Yamamoto¹

¹ Faculty of Art and design, University of Tsukuba

² Doctoral Program in Art and Design, University of Tsukuba

ABSTRACT

As part of a refurbishment plan for dormitories which were built for short-term stay overseas students, a color plan was developed in order to improve the student experience and increase the occupancy rate. Relative to Japanese, foreigners pay more attention to the color used in their rooms, and it was decided to use bright accent colors in the dormitories to create a comfortable living environment. An YR~Y scheme was used for the base colors in order to harmonize the buildings with their environmental setting., and also, by adding accent colors, previously monotone housing facilities were transformed into stylish and more visually engaging buildings.

1. RESEARCH BACKGROUND AND OBJECTIVES

The University of Tsukuba covers an area of 257 hectare with accommodation for 3849 students (as of April 1, 2016) and 2,407 overseas students (as of December 1, 2016). There are a large number of dormitories, by Japanese standards. The exterior walls of the dormitories are mostly beige and considered by the students to be gloomy and boring. Accordingly, the university initiated a program of improvements for painting the dormitory exterior walls in 2009 to make students' lives more comfortable and colorful. With this refurbishment, in order to improve the evaluation of residents using the dormitories, and increase the occupancy rate, a color plan was developed for both the exteriors and interiors of dormitories 33~35 in the Inchinoya area of the campus. At the same time, color schemes for the refurbishment of dormitories 31~32, were also developed.

The enrollment of foreign students in the University of Tsukuba has gone through a rapid expansion, and it will continue to increase. The living environment has a great impact on enrollment. Also, according to the research of Baniani and Igarashi (2009), compared to Japanese people, foreigners pay more attention to the color schemes of their rooms. Based on this, we decided to use bright accent colors in the dormitories in an attempt to create a pleasant living environment for overseas students.

2. INCHINOYA DORMITORIES

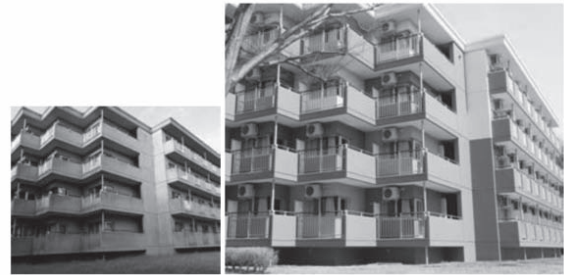
The Inchinoya dormitories are located in the north of the campus, and are quite distant from the teaching rooms and research buildings. The dormitory is surrounded by lush greenery and there is a small lake to the south of dormitories 34~35. It is a quiet area surrounded by trees. Dormitory 31~33 is an 8-story building and Tsukuba mountain can be seen from the rooms at the top of the dormitory. There are barrier-free rooms on the 1st floor of dormitory

33 for students with disabilities. Above this, floor occupancy alternates by gender. Dormitory 34~35 is a 4-story, rectangular building. Using the protrusion of the balconies, the south side of the building has a zig-zag design. Dormitory 34 is a men-only dormitory and dormitory 35 is women-only.



Before Refurbishment After Refurbishment

Fig.1 Dormitory 33



Before Refurbishment After Refurbishment

Fig.2 Dormitory 34

3. METHOD OF COLOR PLANNING

Based on a literature survey and case studies of color planning of other university campuses, dormitories and residential areas, ‘stylish’ and ‘diversity’ were the design keywords for the color of the dormitories. The choice of the base color was limited by the color of the building material. Then, based on the particular features of a building, accent colors were chosen. After this, A4-sized color and material samples were created, for comparison in the field, to determine which colors would be finally used.

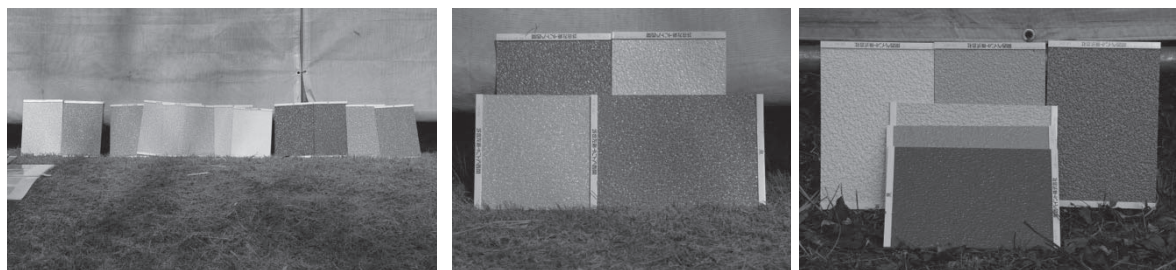


Fig.3 A4-sized color and material samples

4. COLOR PLANNING AND DESIGN CONCEPT FOR EXTERIOR WALLS

5~6 colors were selected for one building. The colors used are shown in table 1. A gradation effect was created with accent colors for the balconies of dormitories 31~33. A darker color was used for the lower floors, and lighter colors used for higher floors. For instance, the balconies of 1st~2nd floors used a low value purple (5P 4/6), whereas balconies of the 3rd~4th floors used a high value purple (7.5P 6/4), the 5th~8th floors used yellow (2.5Y 8/4). By changing the colors and values, the dynamic design of the buildings was highlighted. Also, high value colors used on higher floor helped reduce the monolithic quality of the buildings. ‘Horizontal’ and ‘vertical’ designs for dormitories 34 and 35 were initially discussed and planned, however, in order to highlight the zig-zag design of the

building, random accent colors were used for the balconies. This color planning has never been used before. The accent colors for the balconies of dormitory 34 were yellow (7.5YR 7/8) and blue (5BG 5/2), and the accent colors of dormitory 35 were yellow (7.5YR 7/8) and red (10R 5/6).

Table 1: Color for Exterior Wall (Munsell data was calculated according to JPMA and material sample)

Dormitory	Base color	Sub base1	Sub base2	Accent1	Accent2	Accent3
31	5Y 8.5/0.5	10YR 6.5/2	7.5YR 5/2	2.5Y 8/4	7.5YR 7/6	10R 5/6
32		10YR 7.5/6			2.5G 7/2	5G 5/2
33		10YR 6.5/2			7.5P 6/4	5P 4/6
34		7.5YR 5/2	5BG 6/2	7.5Y 7/8	5BG 5/2	
35			5YG 6/3		10R 5/6	

5. COLOR PLANNING AND DESIGN CONCEPT FOR INTERIOR WALLS

For a positive and personalized living experience, the interior color of the dormitories was also designed. White and brown were chosen as base colors which can make people feel calm. The accent colors were then planned, based on the simple base colors. For example, dormitory 33 had a spacious space, so a darker mahogany color was used for the floor. And green and blue were used as accent colors which are relatively gender-neutral. The color of a corridor in dormitory 33 is shown in fig.4. Also, a unifying overall color was used for the interiors, which differs from floor to floor, meaning that the floor can be recognized by the color.

Because of the relatively small communal areas, a light maple color was used for the floor, and green and lavender as the accent colors in dormitory building 33~34. As shown in fig.4, the color of the doors is different at the end of the corridors. In addition, each floor of dormitory building 33~34 is divided, by color, to indicate whether you are in the east or west of the building. enabling quick and easy orientation. In addition, relative to students' rooms, brighter accent colors were used in communal areas such as the 2nd and 4th floor lounges.

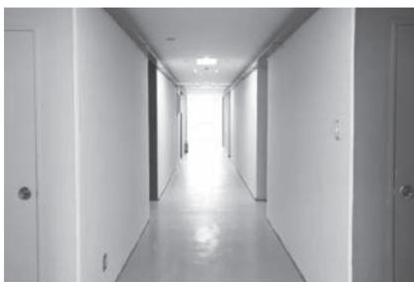


Fig.4 Dormitory 33 corridors

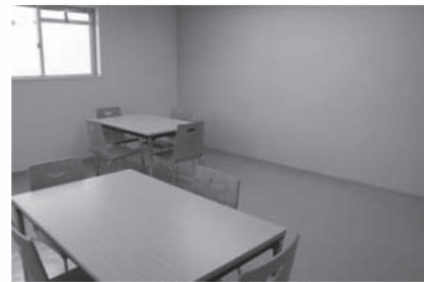


Fig.5 Dormitory 34 lounge

6. EVALUATION OF COLOR PLANNING

Refurbishment of the international dormitories was completed in March 2016, and rooms occupied in April. In order to collect feedback and evaluate the reaction to the color used for exterior walls, room doors, interior walls, lounge areas etc., a questionnaire was circulated in late August.

Q1. あなたが住んでいる棟の外壁の配色について About the color of the facade of the dormitory where you live					
	非常に very	やや somewhat	どちらとも言えない neither	やや somewhat	非常に very
① 明るい bright	----- ----- ----- ----- -----				暗い dark
② リラックスした relaxed	----- ----- ----- ----- -----				緊張感のある tense
③ 変化のある various	----- ----- ----- ----- -----				変化のない monotonous
④ 気に入った favorite	----- ----- ----- ----- -----				気に入らない unfavorable
Q2. あなたの部屋のドアの色について About the color of the door of your room					
	非常に very	やや somewhat	どちらとも言えない neither	やや somewhat	非常に very
① 明るい bright	----- ----- ----- ----- -----				暗い dark
② リラックスした relaxed	----- ----- ----- ----- -----				緊張感のある tense
③ 変化のある various	----- ----- ----- ----- -----				変化のない monotonous
④ 気に入った favorite	----- ----- ----- ----- -----				気に入らない unfavorable

Fig.6 A part of the questionnaire

7. CONCLUSION

Focusing on the objectives of coordinating the buildings with the surrounding environment, and creating a space suitable to student life and activity, a bright, modern color plan for student dormitories 31~35 of the University of Tsukuba was developed. A survey, using questionnaires, was conducted in order to poll the views of the building occupants and improving the utilization of color. The problems arising from this planning, and the situation as described by the occupants, will be used as key reference points for future work.

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*Address: Faculty of Art and Design, University of Tsukuba
1-1-1 Tennodai,,Tsukuba, Ibaraki, 305-8574, JAPAN
E-mails: tarotsukuba@geijutsu.tsukuba.ac.jp*