

Design Expression of the Civic Participation Type Flower Art

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Abstract

In recent years, participatory community events have been increasing. Efforts to develop links between community members and universities or local governments by holding various events have also increased. The “Making Flower Art” event has been held since 2011 as part of the Tsukuba Festival¹, with between 2,600 and 4,000 potted flowers being arranged in a space of 15 meters by 15 meters to create an image. We proposed and drew the designs for these events, and students and city residents laid them out. This paper proposes a method for transferring designs from paper to a large, 15 meter on each side space. To create the image with flowers, the design must be converted into dots. Beginning in 2014, We also surveyed viewers about their impressions of the flower art. The process of creating flower art at the Tsukuba Festival with participation from both university students and city residents has provided opportunities for developing communication skills.

Key words: Graphics Education, Area Design, Community Service

1. INTRODUCTION

“Making Flower Art” originated as a gesture of hope for recovery from the Great East Japan Earthquake of March, 2011, and has continued every year since. Following the event, the potted flowers are sold and the proceeds donated to the non-profit Revolve Institute for School Education, which uses the money to purchase potted flowers for elementary schools in Miyagi Prefecture that were affected by the Great East Japan Earthquake.

One of the authors commissioned by the Tsukuba Center Area Revitalization Committee² to handle event planning, image design, and event management on the day of the event, starting in the project’s first year.

The commercial district near Tsukuba Station is lively, but the nearby Center Square and the pedestrian path that runs north-south through the central area sees only scattered foot traffic and is often deserted. This paper evaluates the flower art event and proposes effective design methods, with the goal of contributing to the community by creating a space where people can gather and interact with visitors from out of town.

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2. Designing the flower art

When planning the flower art, only a certain number of potted flowers were available, so the design took into consideration both the varieties and the number of pots per variety available. Based on the design, I calculated the ratio of varieties required. It was also necessary to link the design concept to the theme of the Tsukuba Festival. Decisions were made on a holistic basis taking all of these factors into consideration.

(Fig. 1) intended to express mourning for the victims of the Great East Japan Earthquake and hope for their recovery.

The theme for 2012 was Tsukuba's science and hopes for the future (Tsukuba is a major center of scientific research). The flower art design combined the Tsukuba Expo Center's H-II rocket, a symbol of the city, and a rainbow expressing hope for the future. This "Rainbow and Rocket" design (Fig. 2) represented harmony between science and nature.

The festival theme for 2013 was innovation through robot technology. The flower art design includes the Robotics Tsukuba mascots as well as the word "50th" to mark the 50th anniversary of the founding of Tsukuba Science City, a science center within the city (fig. 3).

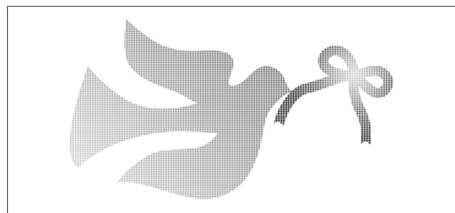


Figure 1 "Dove and Ribbon" design for 2011

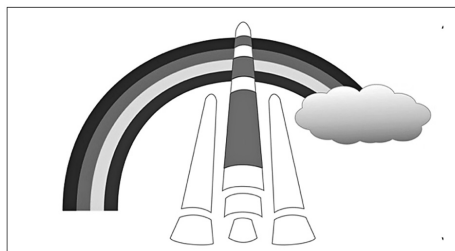


Figure 2 "Rainbow and Rocket" design for 2012

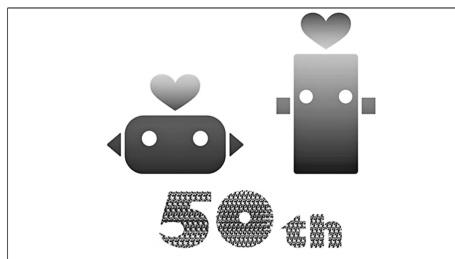


Figure 3 "Robotics Tsukuba and Tsukuba Science City 50th Anniversary" design for 2013

The design for 2014 incorporates the logo from the “Real Tsukuba!” slogan that was launched as part of efforts to enhance the city’s image. In addition, to express Tsukuba’s balance of nature and science, the design includes the Earth and stars representing a flash of inspiration (Fig. 4).

3. Converting designs to flower art

To draw up the plans for the flower art exhibition, it was necessary to take into consideration the color and quantity of each type of potted flower. The size of the flower art and the spacing between flowers had to be adjusted each year based on the number of flowers available that year.

Using this plan, the design was enlarged and the flower placement checked against a plan of the Tsukuba Center where the event is held. The flower art was then created.

3.1 Drawing the exhibition plan

In the plans for the “Dove and Ribbon” created in 2011, the project’s first year, the base of the wings connected with the bird’s body. However, since the flower art was exhibited for 12 days, it was necessary to water the flowers, and a 50-centimeter pathway had to be added between the wings and body (Fig. 5).

3.2 Expressing color gradations

To convert color gradations in the plan into flower art, dots were used to express the color of the boundary between flowers of different colors (Fig. 6).

4. Creating the flower art

About 30 students from Tsukuba Gakuin University and visitors to the Tsukuba Festival were invited to participate in making the flower art. The students explained the project’s significance to the festival visitors and encouraged them to participate.



Figure 4 “Real Tsukuba, Stars, and Earth” design for 2014

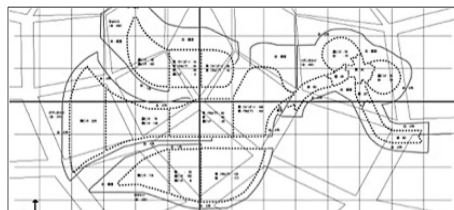


Figure 5 Exhibition Plan for “Dove and Ribbon” (2011)

4.1 Making the outline

Masking tape was used to outline the design on the Center Square. Pots were placed on the ground starting with the borders of the shapes, following the taped outlines (Fig. 7). This provided a sense of the overall scale of the image as the pots were being laid down.

4.2 Flower placement by community participants

Students invited visitors at the Tsukuba Festival to participate in making the flower art. They encouraged a wide range of people to join the activity, including parents with children, city residents, and visitors from out of town (Fig. 8).

5. Exhibition of the completed flower art

Because the completed flower art measures more than 20 meters across, viewing it from above is ideal. Fortunately, Tsukuba's Center Square, where the flowers were exhibited, has a tiered design that allows the image to be viewed from the top level.

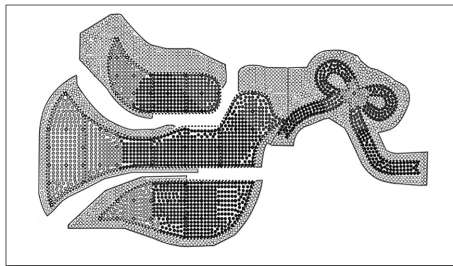


Figure 6 Color layout drawing for “Dove and Ribbon” (2011)



Figure 7 Creating the “Dove and Ribbon” flower art (2011)



Figure 8 Community members placing potted flowers (2011)

Completing the flower art took about three hours from start to finish (Figs. 9-12).

6. Evaluating viewer impressions of flower art using the semantic differential method

At the events held from 2011 through 2013, assessing ordinary viewers' impressions of the



Figure 9 Completed "Dove and Ribbon" flower art (2011)



Figure 10 Completed "Rainbow and Rocket" flower art (2012)



Figure 11 Completed "Robotics Tsukuba and Tsukuba Science City 50th Anniversary" flower art (2013)



Figure 12 Completed "Real Tsukuba, Stars, and Earth" flower art (2014)

flower art was difficult. For that reason, during the 2014 “Making Flower Art” project, we administered a questionnaire using a semantic differential scale to viewers in order to assess their impressions of the flower art from the perspective of *kansei* (affective) engineering.

6.1. Methods

The survey was administered to 122 city residents who attended the 2014 Tsukuba Festival. Data from respondents under the age of 12 were discarded based on the appropriateness of answers, resulting in a total of 118 survey subjects (36 male, 82 female, average age 39.9 years).

The 20 adjective pairs in the semantic differential scale were adopted from Suzuki and Gyoba’s (2002)^[1] assessment of stimulation from abstract paintings. The target of our assessment was the flower art created in 2014, comprised of the three images: the Real Tsukuba logo, the stars, and the Earth (see Fig. 4). Rather than asking respondents to assess the entire design including its arrangement, the survey presented the three comparatively simple objects independently, with the goal of clarifying ordinary viewers’ sensory evaluation factors for flower art.

The survey was administered in the form of a street questionnaire. Each survey subject was asked to look at the completed flower art and then rate each of the three objects on a 7-point scale. The survey took subjects approximately 3 to 5 minutes to complete.

6.2. Results and discussion

The mean ratings of the adjective pairs for each object are given in Fig. 13. In addition, ratings

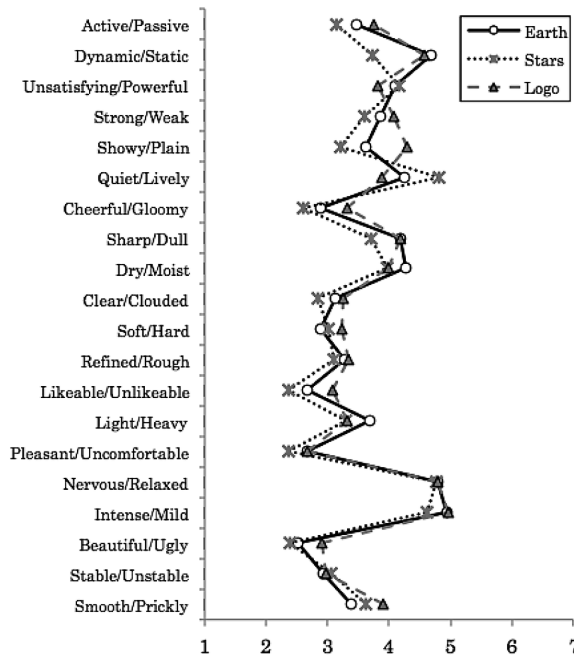


Figure 13 Profiles of semantic differential rating scale values for each object, Earth, Stars, Logo

of concepts such as “relaxed” and “mild” were relatively high, suggesting that respondents formed impressions encompassing the flower art and the atmosphere of the event as a whole, rather than in response to the specifics of each object’s design.

Next, to determine the factor structure for sensory evaluations of flower art, we carried out an exploratory factor analysis. Based on a scree plot, we determined that four factors were pertinent. Factor loading after maximum likelihood estimation and promax rotation is shown in Table 1. Each factor was designated as “activity,” “integrity,” “value,” or “fluidity.”

In contrast to the factor structures that are typically indicated by semantic differential scales, capability and activity factors were subdivided. However, to determine whether this is phenomenon is unique to sensory evaluations of flower art designs, comparisons with evaluations of the designs prior to their transformation into flower art will be necessary, along with other research.

7. Conclusion

Creating flower art requiring an exhibition space larger than 15 meters long on each side was a significant undertaking. By communicating with local residents and other event participants, the participating university students came to understand the power of the form of design.

When explaining the significance of the flower art project to community members and encour-

Table 1 Factor loading for adjective pairs used in semantic differential scale

Adjective Pairs	<i>F1</i>	<i>F2</i>	<i>F3</i>	<i>F4</i>
Active/Passive	.707	-.134	.112	.277
Dynamic/Static	.691	-.155	-.137	-.122
Unsatisfying/Powerful	-.686	.093	.048	-.287
Strong/Weak	.670	.068	-.191	.141
Showy/Plain	.622	.127	-.079	.092
Quiet/Lively	-.531	.008	-.160	.224
Cheerful/Gloomy	.414	.160	.372	-.265
Sharp/Dull	.355	.307	-.294	-.118
Dry/Moist	.199	.022	-.054	-.139

Clear/Clouded	.020	.875	-.065	-.168
Soft/Hard]	-.187	.635	.014	.102
Refined/Rough	-.045	.485	-.036	.380
Likeable/Unlikeable	.173	.414	.215	.038
Light/Heavy	.098	.306	.084	-.104

Pleasant/Uncomfortable	.105	.193	.560	.071
Nervous/Relaxed	.224	.039	-.544	-.067
Intense/Mild	.483	-.012	-.542	-.174
Beautiful/Ugly	.166	.133	.523	.109

Stable/Unstable	-.010	.272	.157	.442
Smooth/Prickly	.009	-.111	.093	.392

aging them to participate, showing them the plans on paper was effective. Seeing the drawings likely made it easier for participants to visualize the image being created.

This study suggests that the evaluation characteristics for flower art are unique. Future research will compare impressions of flower art with impressions of designs printed on paper to investigate the differences in viewer evaluations of the two.

Notes

- 1 The festival began on the 25th anniversary of the founding of Tsukuba Science City in 1988, and includes many events such as an international exchange fair and the flower art project.
- 2 The committee was launched in 2009 by public institutions, companies, and universities located in Tsukuba Center Area. The organization aims to encourage local development and contribute to the community through clean-ups, crime prevention, disaster preparation, and other activities.

REFERENCES

- Suzuki, M. & Gyoba, J. (2002) Contrastive Analysis of Sensory: relevance of Factors Affecting Aesthetic Impressions. *The institute of Electronics, Information and Communication Engineers, Technical report Information processing of human* 101 (698) 31-38.