

Circulating History; Design Agency and the case of Museum Uniforms.

Else Skjold^(a), Rikke Stetter^(a), Trine Bruun Petersen^(b), Kjetil Aas^(a)

a) The Royal Danish Academy, Copenhagen, Denmark

b) The Royal Danish Collection, Copenhagen, Denmark

Keywords: Design for Circularity; Design for Longevity; Collaborative Design Processes; Circular Uniforms, Cultural Heritage of Textiles.

Introduction

The empirical data of this paper will showcase a series of workshops held with management and staff at a museum that ensured ownership of the process and willingness to engage with the development of a circular uniform concept. The paper will further showcase how how cultural heritage and historical circular practices stored in museum collections can help inform design for prolonging use phases (Hasling & Ræbild 2017).

Background and context

Rosenborg castle is a unique organization affiliated under the Royal Danish Collection that caretakes a series of Danish castles and exhibition spaces. In 2023, the research team and the management of Rosenborg together decided to develop a concept for circular uniforms, here understood as a collection wheel (Ræbild, 2015) that considers how the various elements fit the brief and offer opportunities for the circular principles of 9R (Kirchheiner, 2023). This contributes to existing literature on circular workwear and public procurement as a pivotal topic of inquiry within longevity research (see i.e. Huulgard et al, 2022; Petersen & Riisberg, 2016).

The brief had multiple constraints; it should match the existing budget; it should be sensitive to the cultural heritage and significance of Rosenborg; it should be adaptable to a variety of functional needs spanning from guards to custodians, conservation staff, museum sales staff, or educational staff for the school service; finally, it should include principles of layering since the castle itself has no heating system so that the temperature varies dramatically during seasons.

These constraints would require a high level of sensitivity to needs and ideas. Acknowledging how the success criteria of designers working with sustainability or circularity lies in their ability to nest their work at organizational level (Karell and Niinimäki 2020), the research team would need to facilitate common understandings and engagement in a collaborative design process (Friis, 2016; Binder & Brandt, 2018).

For this, a workshop toolbox was developed containing 'boundary objects' (Star, 2010), that is, visual and tactile artifacts through which participants can obtain shared understandings in design dialogues for opening what Schön (1983) names 'as-if-worlds' in iterative and abductive processes (Dorst, 2015). Based on this, three workshops were facilitated by the research team.

Workshop 1 - Staff

This workshop aimed to uncover staff experiences and visions regarding the uniforms' functionality and aesthetics. Participants were asked to take photos of their uniforms in use and bring worn uniforms illustrating practical challenges. The workshop included three key exercises:

Photo analysis and reflection: Staff were divided into groups (security and service personnel) to analyze their photos, identifying positive and negative aspects. These reflections, supported by visual materials, were shared with the larger group.

Visions for future uniforms: Groups discussed preferences regarding functionality, identity, maintenance, and gender considerations. Findings were documented on posters and presented in plenary.

Toolbox introduction: A dialogue tool consisting of garment sketches, color charts, and fabric samples was introduced. Groups used these materials to collaboratively design visual and conceptual prototypes, which were later shared and refined (see figure 1).



Figure 1. Staff working with the toolbox kit in workshop 1. © Rikke Stetter.

The insights from this workshop illustrated several issues regarding lack of functionality and comfort in the current staff uniforms. And, how staff members felt proud to work at the museum and wished to wear uniforms that better represented the heritage and values of Rosenborg with regards to aesthetics, stylistic references, and choice of materials.

Workshop 2 - Management

The second workshop focused on refining staff insights and exploring management's visions for the uniforms' symbolic and functional roles. Key activities included:

Presentation of staff input: Findings, including critique points and proposed ideas, were presented to management.

Visual identity exploration: Management worked with image cards of uniforms to investigate potential directions for the uniforms' aesthetics and symbolism. Footage from historical uniforms of Rosenborg were included, representing both aesthetic, functional and material aspects, as well as principles of circularity - i.e. traces of size adjustments, mending and repairs, decorative and replaceable ribbons for protection of wear and tear etc.. This process facilitated open discussions, enabling a shared understanding of the uniforms' role within the organization (see figure 2).



Figure 2. Image card from toolbox 2: a uniform worn by custodians at Rosenborg castle in the early 20th Century with visible traces of mending and adjustments in the lining. © Else Skjold.

Bringing staff insights together with various images of uniforms to the management group brought awareness of the fact that the Rosenborg collection of historical custodian uniforms holds manifold examples of ways in

Conclusions

Through a series of workshops, supported by visual and tactile boundary objects, a foundation was established for developing a circular uniform concept that balances economic framework, practical needs, and cultural and organizational identity.

This highlights how designers can obtain more agency by being nested thoroughly within an organizational context, and it further showcases how historical textile collections at museums might inform circular design for longevity going forward.

Acknowledgments

This project was financed by Lifestyle & Design Cluster, the National Business Cluster under the Danish Ministry of Higher Education and Science (298.925 DKK).

References

- Binder, T., & Brandt, E. (2018). Hvad har design med samskabelse at gøre? Foggaard, M.K. and ongh, M. (Ed) *Ledelse og samskabelse I den offentlige sektor*, Dansk Psykologisk Forlag, p. 327-355.
- Dorst, K. (2015). Frame creation and design in the expanded field. *She Ji: The journal of design, economics, and innovation*, 1(1), p. 22-33. DOI: 10.1016/j.sheji.2015.07.003
- Friis, S.A.K. (2016), The 6C model. The contribution of design to open, complex, problem solving. *The International Journal of Design in Society*, 10(3), p. 13-30.
- Huulgaard, R.D., Kristensen, H.S., Remmen, A. and Smink, C.K. (2022), Circular Public Procurement: A Case Study of Workwear and Laundry Services. Bals, L., Tate, W.L. and Ellram, L.M. (Ed) *Circular Economy Supply Chains: From Chains to Systems*, Emerald Publishing Limited, Leeds, p. 329-341. <https://doi.org/10.1108/978-1-83982-544-620221017>
- Karell, E. & Niinimäki, K. (2020). A mixed-method study of design practices and designers' roles in sustainability-minded clothing companies. *Sustainability*, 12(11), 4680; <https://doi.org/10.3390/su12114680>
- Kirchherr, J., Yang, N.N., Schulze-Spüntrup, F., Heerink, M.J. & Hartley, K. (2023). Conceptualizing the Circular Economy (Revisited): An Analysis of 221 Definitions. *Resources, Conservation and Recycling*, 194, 10700. <https://doi.org/10.1016/j.resconrec.2023.107001>
- Petersen, T.B. & Riisberg, V. (2016). Pockets, Buttons and Hangers: Designing a New Uniform for Healthcare Professionals. *DesignIssues* 32(1), p.60-71.
- Ræbild, U. & Hasling, K.M. (2019). Sustainable Design Cards: A Learning Tool for Supporting Sustainable Design Strategies. Niinimäki, K. (Ed) *Sustainable Fashion in a Circular Economy*. Lahti: Aalto ARTS Books ©Kirsi Niimäki and the authors, p. 128-151.
- Ræbild, U. (2015). *Uncovering fashion design method practice. The Influence of Body, Time and Collection*. Unpublished doctoral dissertation. © Design School Kolding. DOI: 10.13140/RG.2.1.2432.6163
- Schön, Donald A. (1983) *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books. <https://doi.org/10.4324/9781315237473>
- Star, S.L. (2010). This is not a boundary object: Reflections on the origin of a concept. *Science, Technology & Human Values*, 35(5), 601-617. <https://doi.org/10.1177/0162243910377624>