

Diversity, Equity, Accessibility, and Inclusion Audit

Prepared for Kiewit Luminarium by the Exploratorium

Executive Summary | What did we achieve?

This audit of the design features intended to enhance Diversity, Equity, Accessibility, and Inclusion (DEAI) at the Kiewit Luminarium (KL) examined approximately half of all exhibits at KL. It shows that KL successfully provides a range of experiences and design features – both throughout the museum and within specific galleries – that prior research and recommendations for best practices in inclusive design suggest may enhance accessibility and contribute to feelings of inclusion among diverse audiences. It also identifies some areas for future improvement.

Accessibility

At KL, ADA design standards were often surpassed. Over half of the exhibits audited provided both front and side reach access for wheelchair users; while only one type of reach is *required* for wheelchair access, providing both allows for wheelchair users to have greater agency in how they choose to engage at an exhibit. Designers also incorporated inclusive features that go beyond ADA by considering a wide range of possible capabilities in terms of hearing, long- and short-term memory, vision, color perception, language production, literacy, lifting strength, and dexterity. With the exception of vision, over half the experiences required no abilities in a given accessibility category. In addition, *all* experiences were accessible to visitors who are Deaf or have hearing impairments and to visitors who are colorblind.

One area for improvement is in installation and maintenance of exhibits. Some exhibits fell slightly outside of the ADA recommended dimensions because of small changes such as the adjustment of leveling feet on tables; ensuring that furniture with leveling feet remain within the ideal ADA range would increase accessibility with little cost. Moreover, future exhibit development may wish to prioritize creation of experiences for visitors with low or no vision, as this was the least served group across accessibility demands.

Diversity of Experiences

KL features a variety of experiences that may appeal to different visitors. While there are many possible exhibit diversity parameters, this audit focuses on scale of the exhibit, scale of the interaction, and interaction type, as these were the parameters that the design teams were interested in. The distribution of large and small scale exhibits was balanced, with 48% of exhibits large scale and 52% small scale overall. Regarding the scale of the interaction, while tabletop interactives were most common in all galleries, each gallery also featured at least one whole body interaction. In terms of interaction type, about half of experiences were planned discovery (in which visitors' experience a predetermined outcome) while 40% were open-ended (with many possible interactions or ways of being "right") and 11% involved no interaction but focused on looking, listening, or reading. The specific distribution of these characteristics varies across different galleries, reflecting the fact that galleries have different goals. For example, The Grid – a smaller space designed to feel more homey than other spaces – had a relatively large proportion

of small scale exhibits. This audit demonstrates KL's commitment to offering a variety of experiences in terms of scale and interaction type. However, future evaluation is needed to connect the specific parameters measured here with visitor experience outcomes.

Exhibit Label Best Practices

With few exceptions, exhibit labels at KL followed a standardized style and formatting for the museums' bilingual exhibit labels in which English was displayed to the left or above and Spanish was displayed to the right or below. Color accents were employed to differentiate exhibit labels by gallery. To reduce cognitive load, designers also sought to keep text short, and succeeded in having over 90% of labels containing 100 words per language or fewer.

Designing for Girls' Inclusion

Exhibits at KL implemented many of the design features identified in the Exploratorium's Exhibit Design for Girls' Engagement (EDGE) project as supporting girls' engagement at exhibits. Every exhibit audited at KL had at least one EDGE design feature. Two features were particularly widespread: visitors could watch others to preview the interaction and there was space for three or more people at 60 of the 62 exhibits audited. An average of five EDGE design features were present at each exhibit.

Representation in Artwork and Photography

The artwork and photography displayed throughout the museum highlight diverse identities in STEM. Over two thirds of observations included people perceived to have racial or ethnic identities that are marginalized in the US, including Black, Latinx, Asian, Indigenous, and other people of color, and 63% of observations included women or non-binary people. These percentages are significant, particularly given that the remaining minority of exhibits include art in which people's identities were ambiguous (e.g., an image of a person's shadow). Overall, 47 out of 60 observations identified one or more people perceived as holding a marginalized identity, while only 13 either represented only dominant identities or were ambiguous.

Areas for Improvement and Future Development

While the current set of exhibits represents an environment in which DEAI principles were largely implemented, future studies may be warranted to better understand the connections between the design features employed and visitors' own experiences of accessibility and inclusion at KL. In addition, the present study revealed some areas for improvement and future growth. First, small modifications could bring certain exhibits back into the recommended ADA dimensions. Second, this audit revealed that Blind and visually impaired visitors can interact with fewer experiences than others; future development could focus on creating engaging experiences for this audience.