

Applying universal and equitable design principles for equity and inclusion in mining

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ABSTRACT

The Australian mining industry, a cornerstone of the nation's economy, is on a journey towards greater equity and inclusion. This abstract introduces a comprehensive exploration of how Universal Design Principles, stemming from architectural roots, have evolved through automation and digital technology into the more encompassing frameworks of Inclusive Design and Equitable Design. The paper proposes a practical framework for those involved in work, facilities and equipment design in the mining industry to identify and assess for equity and inclusion.

Universal Design emerged in the 1960s with a primary focus on architecture, aiming to create spaces accessible to people of all abilities. Its foundational principles sought to ensure equitable use, flexibility, simplicity, perceptibility, tolerance for error, low physical effort, and optimal spatial considerations. Over time, these principles evolved and expanded beyond physical spaces, finding applications in various fields, including technology, education, and transportation.

In response to advancements in technology and a growing understanding of the multifaceted nature of diversity, Universal Design evolved into Inclusive Design. Inclusive Design goes further than mere accessibility, considering a broader spectrum of users with varying cognitive, sensory, cultural, and socio-economic backgrounds. It emphasises user centred design, customisation options, diverse user research, and continuous iteration. Equitable Design emerged as a framework that addresses not only the diversity of needs but also systemic disparities. It emphasises fairness, justice, and the elimination of structural inequities. Equitable Design encompasses accessibility and affordability, representation and diversity, ethical considerations, and community engagement.

This paper will explore the applications of these design principles through a series of case studies including village and on-site facilities, residential and office based work design and digital and systems technology design. By applying these frameworks in a mining context the paper proposes that mining companies and suppliers can improve diversity, equity and inclusion leading to safer, more engaged and productive workplaces.