

CARE BY DESIGN: BUILDING RESILIENCE THROUGH HUMAN-CENTRIC INFRASTRUCTURE

ABSTRACT Resilient transport begins with delivering the right transport. Responding to Professor Jim Hall's challenge to the industry (Hall, 2024), this paper argues that resilience cannot be achieved without inclusion. Infrastructure that fails to reflect the diversity of its users risks causing active harm, perpetuating exclusion, and undermining resilience.

Building on the rail sector's Safe by Design culture (Hesketh, 2015) we introduced Care by Design, an innovative framework extending safety principles to inclusion, accessibility, and wellbeing, see Figure 1. Developed as a follow-on from SLC and CRN's Stations in the Community paper (SLC and Community Rail Network, 2024), Care by Design introduces the Protected Characteristics+ model and unconscious bias tool, which addresses Transport-Related Social Exclusion (TRSE). Evidence shows 3.3 million people in the North of England face high risk of TRSE (Transport for the North, 2022), and 75% of UK stations remain inaccessible (HM Government, 2021) The UK Parliamentary inquiry Access Denied describes transport exclusion as a measurable systemic failure, preventing access to healthcare, employment, and education (House of Commons Transport Committee, 2025).

The Green Book Review (HM Treasury, 2025), academic insights from resilience theory (Olsson, 2020) and Doughnut Economics (Raworth, 2017) emphasise that value must be judged beyond cost-benefit ratios. Industry and academic evidence highlight the cultural barriers to inclusive design (Zallio and Clarkson, 2021; Barton and Elliott, 2021). By reframing infrastructure as a living system within local contexts, Care by Design provides a structured pathway to deliver human-centric, adaptable, and resilient transport systems. This supports UK policy goals for devolution, place-based planning, and wellbeing; offering transport hubs and stations as catalysts for social value. The paper concludes with practical recommendations, supported by lessons learned from delivered projects, on how to integrate Care by Design into design standards, whilst positioning inclusion and accessibility as core measures of resilience.