

Thesis Project Portfolio

High Utilizers of the Albemarle and Charlottesville Criminal Justice System

(Technical Report)

Paradigms of Punishment & Rehabilitation: The Gendered Failures of Carceral Architecture

(STS Research Paper)

An Undergraduate Thesis

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Table of Contents

Sociotechnical Synthesis

Technical Report: High Utilizers of the Albemarle and Charlottesville Criminal Justice System

STS Research Paper: Paradigms of Punishment & Rehabilitation: The Gendered Failures of
Carceral Architecture

Thesis Project Prospectus

Sociotechnical Synthesis

Like many communities, Charlottesville, VA faces a recurring challenge: a small group of individuals known as “high utilizers” disproportionately consume criminal justice and community resources, including jail space, mental health services, and emergency response efforts. Our technical project sought to learn as much as possible about high utilizers to inform decision-makers about potential interventions that might lessen recidivism among them, improve their lives, and reduce costs to the community. Using arrest data from the Albemarle-Charlottesville Regional Jail (ACRJ), we defined high utilizers as those with four or more arrests within a single year and analyzed patterns across a 34-month period. Analysis of this data and stakeholder meetings resulted in a characteristic understanding of the differences between high utilizers and non-high utilizers and an intensive flow chart built to illustrate the complex, multi-agency system that arrestees go through each time they are booked. We also found that while larceny was the most common statute for initial arrest, later arrests frequently involved probation violations and contempt of court. Finally, we learned that nearly 40% of high utilizer jail stays were shorter than three days, while the remaining majority cycled through longer and more resource-intensive stays. These findings illustrated not only who was being impacted but how complex and repetitive the system had become.

To build on these findings, future steps can include better quantifying of the financial and time aspects of the booking process, understanding the mental health implications of the Brief Jail Mental Health Screener data, looking into the rehabilitation services most used by high utilizers, and investigating the unquantifiable human elements behind the issue.

However, while the data from ACRJ helped us track patterns, it could not tell us much about one critical component: the design of the jail itself. We could not see how the physical

environment—the architecture, layout, and sensory conditions—was shaping outcomes for those inside.

To expand on this gap, my STS project examined a broader, systemic issue underlying the patterns we observed locally. *Paradigms of Punishment & Rehabilitation: The Gendered Failures of Carceral Architecture* explores how U.S. jail and prison design has historically failed to accommodate the needs of incarcerated women, particularly those impacted by trauma, mental illness, and systemic marginalization. Drawing on historical analysis, empirical data, and the frameworks of intersectionality and the built environment, this research examines how carceral spaces perpetuate harm by prioritizing punishment and containment over rehabilitation and care. From early carceral institutions like Walnut Street Jail and Eastern State Penitentiary to modern cost-efficient facilities, correctional design has consistently reflected abstract penal philosophies rather than the lived realities of those confined—especially women. While early models of incarceration emphasized discipline and reform, today’s jails and prisons continue this legacy by disregarding research on how physical environments impact an inmate’s health, safety, and successful reintegration.

The paper outlines key design failures—including excessive noise, lack of natural light, absence of trauma-informed care, and unsuitable architectural choices—which disproportionately harm women of color, transgender women, and others at the intersection of multiple vulnerabilities. These effects extend beyond prison walls, undermining family stability, perpetuating recidivism, and exacerbating cycles of harm.

In response, this paper highlights international models and research-based reforms that demonstrate how gender-responsive, trauma-informed design can improve mental health, dignity, and reintegration outcomes. It argues that meaningful reform requires not just architectural

updates but a fundamental shift in the values embedded in carceral spaces. Ultimately, it seeks to demonstrate that rethinking jail and prison design is a necessary step toward a more comprehensive justice.

Bringing these two projects together reveals how localized data and broader systemic failures intersect. While our technical research identified a high-cost, high-frequency population within ACRJ, my STS research shows how poorly designed carceral environments reinforce cycles of instability and return. Especially for women and other marginalized groups, environments characterized by excessive noise, lack of natural light, and punitive layouts can exacerbate trauma, mental illness, and barriers to reintegration. To meaningfully address recidivism, a deeper examination must be taken into the lived experiences of those most frequently cycling through the justice system—recognizing that jail and prison design plays a critical role with both upstream and downstream effects on their outcomes. Addressing recidivism, requires more than analyzing arrest patterns; it demands rethinking the environments that individuals are placed into. By integrating insights from both technical patterns and sociotechnical critiques, these projects together argue for a justice system that is not only more efficient, but more humane, equitable, and fundamentally rehabilitative.