Chapter 52

The Role of Design in Challenging Exclusionary Urban Spaces

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Abstract

Too often, the design of public space goes unquestioned. Its materials, forms, and functions are accepted as neutral, yet everyday objects quietly shape who feels welcome and who is excluded. This paper examines how design makes visible the unnoticed forms of exclusion embedded in urban environments. It focuses on hostile architecture in London and interventions that restrict the use of public space by people experiencing homelessness. The research adopts interrogative and socially engaged, practice-led methods to explore how spatial decisions reinforce inequality.

A central case study used digital fabrication to reproduce examples of hostile design. These 3D printed artefacts were used in a pedagogical setting with design students as tools for critical enquiry. Handling and analysing objects encouraged students to consider how design influences behaviour, reinforces boundaries, and shapes the daily lives of marginalised groups. The artefacts are positioned as transferable tools for engagement with public, professional, and policy audiences.

The chapter draws on Gibson's theory of affordances to examine how public spaces communicate what is permitted or denied and engages with Petty's critique of exclusionary design as a material expression of social control. This approach demonstrates how small-scale interventions can generate wider conversations on inclusion, empathy, and responsibility in public spaces.

Keywords: *Hostile Architecture, Public Space, Spatial Justice, Affordances, Social Exclusion*

Introduction

Urban design is a site of political contestation. Decisions about the shape of a bench, the placement of a barrier, or the use of spikes on surfaces may appear technical but carry significant consequences for who is permitted to occupy space. This chapter investigates the role of design in the production and maintenance of exclusionary public spaces, with a particular focus on the material strategies of hostile architecture. In recent years, debates around hostile architecture have drawn attention to how design is employed to regulate behaviour and, in many cases, to exclude those whose presence is considered undesirable. Spikes on pavements, benches segmented to prevent lying down, and barriers designed to deter loitering are among the most visible examples. These interventions are often justified as measures to ensure safety or order, but they are better understood as material manifestations of social control[1].

[1]James Petty, The London Spikes Controversy: Homelessness, Urban Securitisation and the Question of 'Hostile Architecture', International Journal for Crime, Justice and Social Democracy 5, no. 1 (2016): 67–81. Accessed July 21, 2025 https://doi.org/10.5204/ijcjsd.v5i1.286.

This chapter examines hostile architecture through a London case study that reproduces exclusionary design objects using 3D printing. These artefacts were introduced into a pedagogical context, yet their significance extends beyond the studio. The central argument advanced here is that reproducing hostile design through digital fabrication can serve as a critical method for engaging diverse audiences in debates on spatial justice. The artefacts operate as methodological tools that render exclusion visible and tangible. By materialising hostile design in forms that can be handled and re-contextualised, the project shows how practice-led research can highlight complex social issues in ways that resonate across academic, professional, public, and policy contexts.

Hostile Design and Affordances

Urban space communicates expectations about use and behaviour through what Gibson has described as 'affordances'; the perceived possibilities for action offered by a given environment[2]. When a bench affords sitting but not lying down (Figure **1**), or when spikes afford deterrence rather than comfort, the built environment actively shapes who belongs and who does not. The concept of affordances is therefore central to understanding hostile design. While Gibson developed the term in relation to perception and action, subsequent scholarship has shown how affordances emerge within the interpretive and regulatory environments in which they operate[3].

Figure 1: The Camden bench in London, designed to restrict certain uses of public space (Image: A. Bennie, 2021).

[2]James J. Gibson, The Ecological Approach to Visual Perception: Classic Edition (Oxford: Taylor & Francis Group, 2014), Accessed December 2024, ProQuest Ebook Central.
[3]Donald A. Norman, The Design of Everyday Things (New York: Basic Books, 2013).

Hostile architecture exploits affordances to restrict or deny certain behaviours, often targeting vulnerable populations such as people experiencing homelessness. What appears to be a practical design choice is in fact a political gesture. Petty situates hostile architecture as a material expression of urban policy, enforcing social control through physical means[4]. Rather than addressing the structural conditions of homelessness, these design interventions remove its visibility from urban space. Hostile design embodies broader dynamics of exclusion, such as the displacement of those whose needs do not align with dominant expectations of order or safety.

It is also useful to contrast hostile architecture with crime prevention through environmental design (CPTED). Cozens and Love observe that CPTED seeks to prevent crime by enhancing surveillance, improving lighting, and nurturing social cohesion, but it does not necessarily target specific populations for exclusion[5]. Hostile design, in contrast, operates more directly to regulate who is present in public spaces, often without accountability. This comparison emphasises how urban policies may appear ordinary while concealing the social control mechanisms embedded in everyday materials.

Historically, street furniture and spatial configurations have regulated behaviour, from anti-skateboarding studs to gated squares[6]. Contemporary hostile design is distinguished by its quiet integration into the urban landscape. The hostility is often obscured through the language of safety or maintenance, yet it functions to remind certain bodies that they are out of place. Understanding hostile design through affordances reveals both the material strategies at work and their embodied consequences.

Figure 2: Public bench in Central London illustrating subtle strategies of exclusion (Image: A. Bennie, 2020).

[4]James Petty, The London Spikes Controversy: Homelessness, Urban Securitisation and the Question of 'Hostile Architecture', 72–73.

[5]Paul Cozens and Terence Love, "A Review and Current Status of Crime Prevention through Environmental Design (CPTED)," Journal of Planning Literature 30, no. 4 (2015): 393–412 https://prohic.nl/wp-content/uploads/2021/02/166-15feb2021-CPTEDReview.pdf.

[6]Steven Flusty, Building Paranoia: The Proliferation of Interdictory Space and the Erosion of Spatial Justice (Los Angeles: Los Angeles Forum for Architecture and Urban Design, 1994).

Affordances emerge through embodied experiences in space. Hostile architecture makes this experience tangible and shapes behaviour and feelings of welcome or exclusion. By reproducing these designs as 3D-printed artefacts, the project makes the politics of exclusion material perceptible and provides a platform for critical enquiry.

Case Study and Methods

The case study examined hostile design interventions in central London. Examples included segmented benches designed to prevent lying down, curved seating that limits rest, and pavement spikes that deter loitering. These interventions were chosen for their recognisability and the clarity with which they express exclusionary intent. Each was photographed, measured, and modelled digitally before being reproduced through 3D printing at a reduced scale.

3D printing served two purposes. First, it enabled accurate replication of exclusionary design forms while keeping them portable. Second, it positioned the project within a practice-led research methodology. By reproducing hostile design objects, the project translated acts of exclusion into tangible artefacts that invited closer critical engagement. These artefacts became tools for reflection rather than instruments of exclusion.

Figure 3: 3D printed artefacts of hostile design (Image: A. Bennie, 2023).

The artefacts were introduced in pedagogical workshops with product and furniture design students, who engaged with them through touch, observation, and discussion. This hands-on encounter allowed participants to recognise the embodied impact of hostile design beyond abstract description.

The project also shows that these artefacts function as transferable methodological tools suitable for community settings, professional contexts, and policy forums. Their tactility supports participants engagement with material politics of exclusion in ways that textual or visual media cannot. The workshop structure offers clear means of examining how design shapes public space and prompts critical dialogue across diverse audiences.

This approach aligns with Dewey's conception of art and design as forms of public enquiry which render shared problems perceptible and debatable[7]. The artefacts operate as probes that draw attention to the politics of urban space, enabling audiences to encounter exclusion viscerally rather than abstractly.

[7]John Dewey, Art as Experience (New York: Putnam, 1934).

Similarly, Binder et al. describe design experiments as 'things to think with' that facilitate reflection and dialogue[8]. In this project, the artefacts functioned in this way as critical tools that provoke discussion and ethical reflection rather than as solutions.

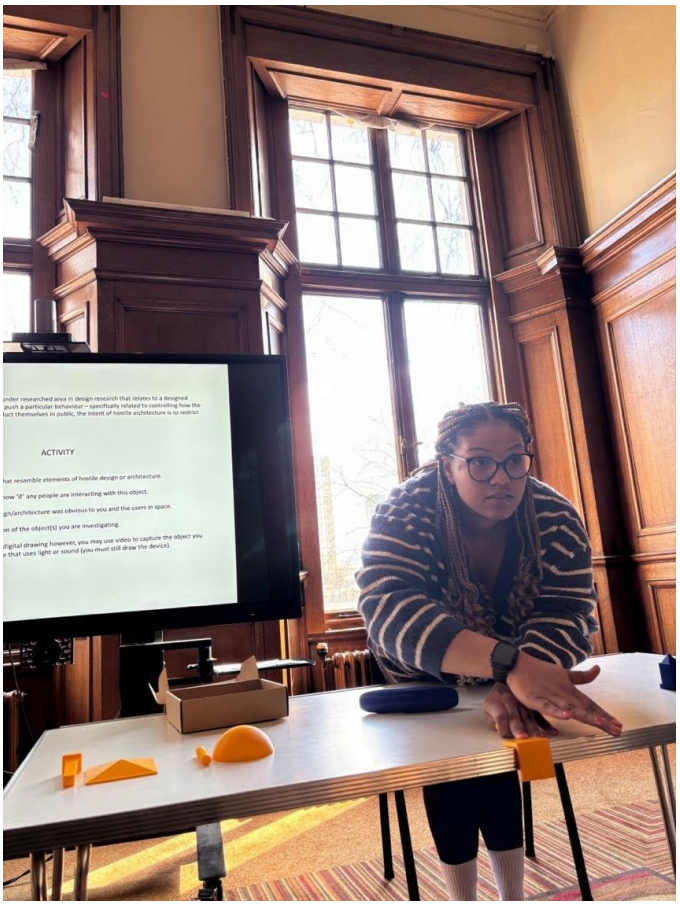

Figure 4: Demonstrating artefacts in the workshop with students (Image: A. Bennie, 2023).

Discussion

The workshops demonstrated that materialising hostile design through 3D printing can open new ways of understanding. Students reported that handling the artefacts heightened their awareness of how design communicates inclusion or exclusion. One participant noted that 'handling the artefacts made it impossible not to see these features in the city anymore and how such designed objects organise behaviour'. Another student described a sketch of an alternative bench configuration that adapted the central divider into a shared backrest, reframing the object's affordance towards comfort and inclusion. These responses indicate how direct engagement with the artefacts prompted students to consider the ethical implications of urban design and how small adjustments might support more inclusive spatial encounters. Compressed into portable, scaled-down objects, these forms foreground the embodied consequences of spatial decisions that might otherwise go unnoticed.

The approach extends beyond teaching. In community contexts, the artefacts could enable public audiences to articulate experiences of exclusionary design. They provide accessible points of entry for

[8]Thomas Binder, et al., Design Things, illustrated edition (Cambridge, MA: MIT Press, 2011).

discussion, allowing communities to engage with material examples rather than abstract concepts. In this way, the workshops operate as platforms for collective reflection on the design of public space.

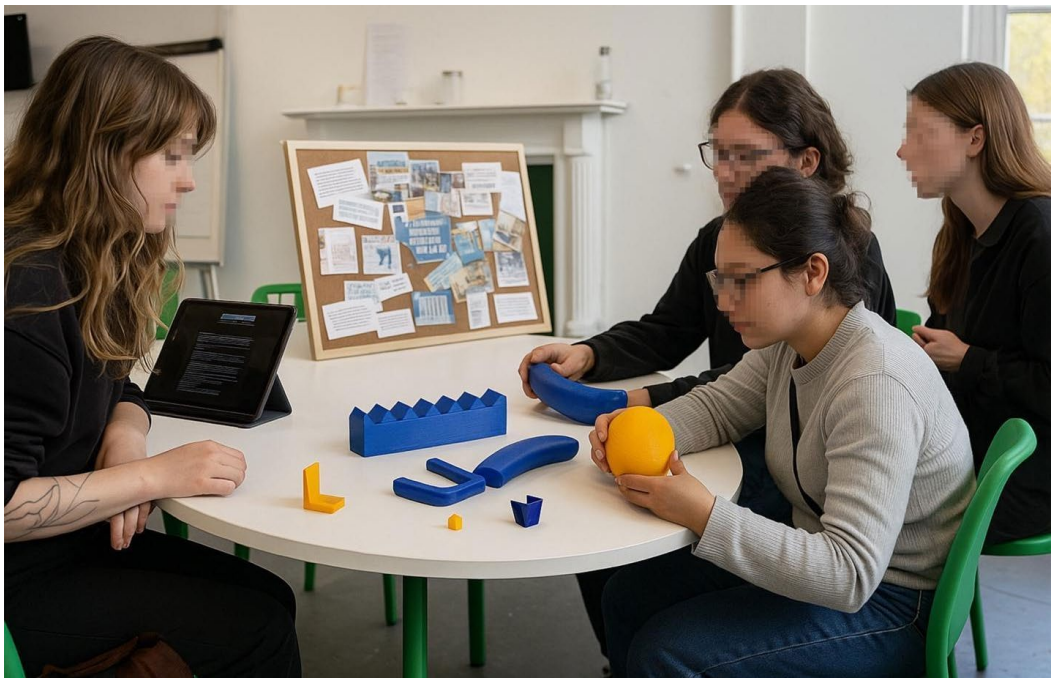

Figure 5: Participants handling 3D printed hostile design artefacts (Image: A. Bennie, 2023).

For professionals, the artefacts could support critical reflection on ethical responsibilities. Designers and urban planners work under competing pressures, from client demands to policy constraints. Introducing hostile design artefacts into professional discussion makes visible the trade-offs implicit in such decisions and encourages consideration of more inclusive alternatives.

While this paper positions 3D printed artefacts as transferable tools for engagement with professional, public, and policy audiences, empirical evidence of such external application is not yet available. Acknowledging this limitation points to an important direction for future research. Subsequent research will examine how these artefacts can support engagement, reflection, and advocacy beyond the studio, offering insight into their broader implications on spatial justice.

Policy engagement represents a particularly significant extension. Hostile design is often implemented without public consultation or oversight. The artefacts offer policymakers tangible evidence of exclusion embedded in the built environment. By materialising exclusion, they make visible consequences that data or reports alone may fail to convey. Ahmed emphasises how institutions often present themselves as neutral while reproducing inequity[9]. Similarly, hostile design presents as functional or aesthetic but embeds exclusionary tactics. These artefacts can help policymakers and civic organisations confront such dynamics directly.

The project demonstrates how practice-led research can bridge academic, public, and policy contexts. Reproducing hostile design as tangible artefacts turns subtle spatial interventions into subjects of debate, opening new ways to critique and challenge spatial norms.

[9]Sara Ahmed, *On Being Included: Racism and Diversity in Institutional Life* (Durham, NC: Duke University Press, 2012), accessed September 1, 2025, ProQuest Ebook Central https://www.cmc.edu/sites/default/files/2022-03/Sara%20Ahmed%20On%20Being%20Included.pdf.

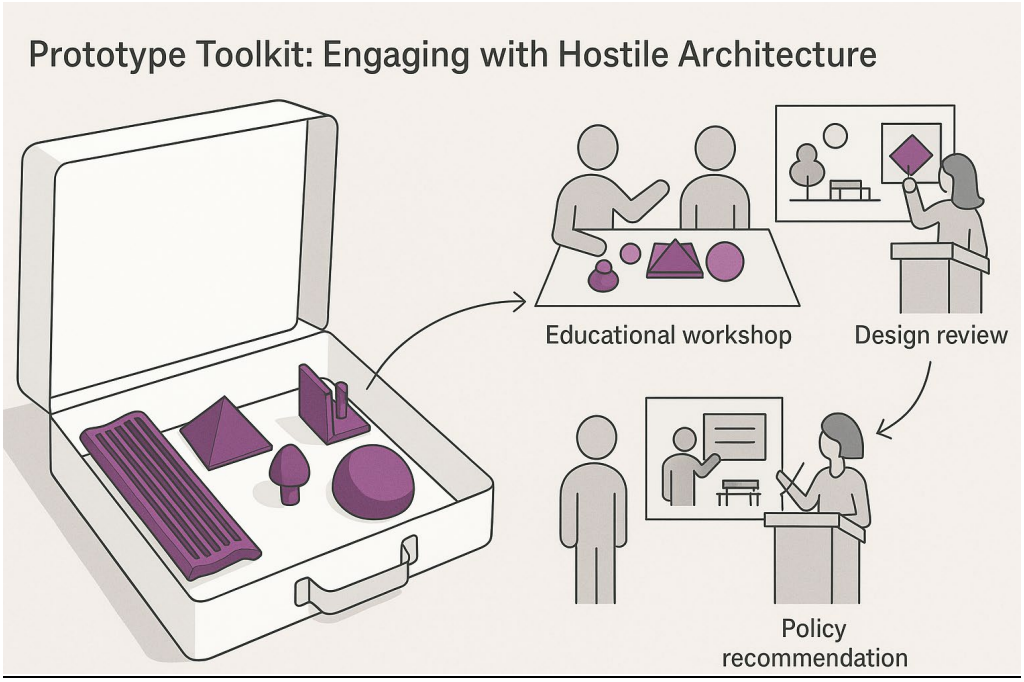

Figure 6: Conceptual diagram for future engagement (Image: A. Bennie, 2024).

This discussion also points to the pedagogical and social potential of the artefacts, which act as catalysts for dialogue across audiences, from students to policymakers, amplifying the visibility of exclusion and inviting contestation.

Conclusion

Hostile architecture operates as a subtle yet pervasive form of social control that shapes who is welcome in urban space. By reproducing these interventions through 3D printing, this project exposes the politics embedded in everyday objects and reframes them as critical artefacts. These artefacts function as methodological tools that extend beyond the studio and support engagement across academic, community, professional, and policy contexts.

The project contributes to debates on spatial justice by showing how practice-led methods can make exclusion tangible and perceptible to diverse audiences. Small-scale design interventions can provoke wider conversations about inclusion, empathy, and responsibility in public space. The research highlights that design shapes not only what the environment affords but also who is excluded.

Through reproduction and recontextualisation, the project affirms the capacity of practice-led research to intervene in complex social issues. The artefacts act as prompts for reflection and critique and invite reconsideration of what public space affords and to whom.

If design can reproduce exclusion with subtlety, it must also be capable of supporting more inclusive futures. The task is not merely to expose exclusion but to insist that design remains accountable to justice and dignity in shaping urban life.

Declaration

The authors declare that artificial intelligence tools were used in the preparation of this manuscript. The use of these tools was limited to assisting with grammar and language, and all outputs were carefully reviewed, verified, and edited by the authors to ensure accuracy, originality, and alignment with academic standards. The authors take full responsibility for the content of this manuscript, including any sections that were supported by AI tools. No AI system was used to generate original research findings, interpret results independently, or draw conclusions without human intervention.

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