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Alice Coleman: Design Disadvantage, 1985
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Background The destruction wrought by the Second World War led to an unprecedented housing shortage in Great Britain. In order to facilitate the replacement of residences for displaced citizens, British authorities opted against rebuilding many of the bombed out rows of pre-war connected houses (known as "semis") in cities like London and Birmingham. Instead, the government and modernist architects embraced large-scale public housing projects, and through the 1970s, block upon block of "point" and "slab" buildings designed in Le Corbusier functionalist fashion sprang up across the urban landscape.

Although highly touted, high-rise complexes turned out to be an inadequate solution to the housing shortage. While many housing complexes were constructed, over time they became associated with crime, vandalism, and high vacancy rates. In 1961 Jane Jacobs authored the seminal book, *The Death and Life of Great American Cities*, in which she argued that public housing complexes destroyed the traditional, mixed-use communities that produce a vibrant street life and social stability.

During the 1970s, what became known as the "environmental design" movement picked up momentum, especially with the 1972 publication of *Defensible Space* by Oscar Newman, which postulates that poor architectural design can encourage criminal activity. Based upon Newman's work, Professor Alice Coleman of King's College in London headed up a research group called the Land Use Research Unit. Formed in 1979, its mission was to study public housing design and how it leads to crime as well as general social "malaise." The group's findings led directly to Coleman's highly influential book, *Utopia on Trial*, in 1985.

Innovation The aim of Alice Coleman's Land Use Research Unit was to build upon the findings of Oscar Newman's work, whose findings she generally accepted as a basis for their own work. The objective was to determine if the spatial scale and

configuration of modern, high-rise housing design was a significant contributing factor to social "malaise" in addition to straightforward criminal acts. To simplify the study, Coleman focused on observable forms of social malaise found on a given block. These included the amount and "quality" of litter, graffiti, the prevalence of damage caused by vandalism, plus instances of excrement (urine and feces). In addition, she utilized information from a government agency for figures on the number of children placed in outside care.

These manifestations of malaise were compared against various characteristics of the housing blocks in which they occurred. Coleman ultimately settled on fifteen significant variables of "design disadvantage" on which to focus. The fifteen variables cover a broad range of architectural features and gimmicks, from whether or not a complex sat on stilts to whether overhead walkways connected multiple buildings. Additional concerns covered how many stories were in a dwelling, how many dwellings were served by a given entrance, where play areas were located, whether entrances were visible to building occupants, the number of vertical routes, even the spatial organization of land allocation. The latter concept compared the notion of semi-private spaces, such as gardens (comparable to American gated "lawns"), with semi-public (multiple owners) and "confused" spaces, in which it was unclear what the land was used for and who policed it.

Throughout all of her analysis of these factors, Coleman focused on three of Newman's guiding principles and applied them to social malaise. First, design features that encourage *anonymity* work against a sense of community and allow people with bad intentions to get by unnoticed. Hence, large values for variables that affected anonymity, such as the number of dwellings served per entrance or corridor, were seen as negative. Second, Coleman is concerned with the ability of inhabitants to conduct meaningful *surveillance* of their properties against possible intruders. Hidden garages, compartments concealed by ground-floor stilts, and remote play areas were considered negative features under this criterion. Lastly, should preventative measures fail, troublemakers should not be allowed to have *alternative escape routes* such as multiple staircases or overhead walkways to other buildings. An additional aspect not in Newman's work was an emphasis on the need for people to be able to uniquely shape their environment as opposed to a uniform standard imposed upon them.

Coleman's group chose two London boroughs, Southwark and Tower Hamlet, comprising a total of 4045 blocks, as well as 54 blocks within Blackbird Leys for comparison. As a basis for comparison, she also chose 4172 homes in the same boroughs to see what levels of malaise could be found there. She presented her findings in an amusing courtroom format, in which she leveled charges at public housing complexes for fostering social malaise, and then brought in the "prosecution" and "defense" for a somewhat one-sided battle.

Needless to say, the prosecution got the verdict.

Coleman presented numerous charts demonstrating the correlation between the size of the design disadvantage variable and the frequency of the abuse. For example, as the number of dwellings served by each entrance increased, so did the levels of litter, graffiti, vandalism, children in care, and urine. At one dwelling per entrance—essentially a house—litter was found at 35% of the locations, while this had climbed to nearly 90% and more above eight dwellings per entrance. She made the observation that malaise occurs in different stages, so that benign neglect like litter precedes more serious problems like graffiti and vandalism, with excrement showing up only in severe cases where the other forms of malaise were already high.

The next stage was to create some form of scoring the results. Coleman devised a disadvantage threshold in which a certain minimum acceptable condition for each of the fifteen design variables was computed, say no more than three stories in a block, or no more than one interconnecting exit. A particular block could score anywhere from 0 to 15, depending on how many thresholds were breached. The 4099 blocks scored an average of 8.1, which then needed to be linked with measured malaise, or abuse scores. Each block would score anywhere from 0 to 8, depending on the amount of litter, graffiti, vandalism and excrement found.

Coleman argued that previous attempts to fix the crime and malaise problems by housing authorities, such as entryphones and blocked walkways, had done nothing to reduce abuse scores. Toward this end, she recommended implementing improvements (i.e., reductions) in the prevalence of each of her fifteen design "suspects" (or disadvantage score). She said that the costs of reworking public housing would pay for themselves over time by making such blocks attractive and self-sustaining.

Utopia on Trial caused quite a stir when it first came out in 1985, leading to calls for implementing Coleman's recommendations. In response, the British government created a Design Improvement Controlled Experiment (DICE) to test out her theories at several locations around London. The Department of Environment then hired Price Waterhouse to evaluate the results of the study. According to Price Waterhouse, the improvements made had a moderate impact on Coleman's abuse scores, but only enough to break even on redevelopment costs. Later critics called Coleman's study overly deterministic with regard to environmental impact on behavior.

Still, Coleman's groundbreaking study forced urban designers to more carefully to consider spatial organization and design layout when creating new projects and neighborhoods. The vision of a uniform urban utopia, complete with towering complexes and walkways in the sky, have been discredited on the basis of

Coleman's and other subsequent studies into the complex spatial relationship between resident and home.

Although the attribution of causation always demands careful investigation, the message of work by Jacobs, Newman, and Coleman is clear—"space matters."

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