# INTRODUCTION

AN OPPORTUNITY FOR ARCHITECTS, PSYCHOLOGY, AND INSTITUTIONAL ARCHITECTURE AFTER WORLD WAR II

IN 1971 ARCHITECTURE CRITIC Ada Louise Huxtable published a column in the *New York Times* in response to the prison riots at Attica two weeks earlier. The riot began over conditions at the prison and ended after thirty-two inmates and ten hostages were killed as the authorities retook control of the prison from a thousand inmates. Huxtable blamed the inhumane design of the buildings and declared that architects needed to pay closer attention to psychology and social science, suggesting that architecture might prevent such violence.[1] In contrast to the fortress-like architecture of Attica, Huxtable endorsed recent shifts in prison design that made use of new plastic materials to make security "less visually and psychologically disturbing." She offered examples of what these prisons might look like, pointing to the glass pavilions and soft furnishings at Leesberg, New Jersey, as a model of the future.

Wolf Von Eckardt, another critic, also applauded architectural solutions, a "new creative prison architecture without bars, designed to aid treatment and make the traumatic aspects of confinement as inconspicuous as possible." This exemplary prison was itself prompted by prison riots in New Jersey in 1952, but it was only built thirteen years later due to both political and financial complications. The 504-bed prison was subdivided into six pavilions, each of which had a courtyard at the center. The courtyards were enclosed on all sides by a breezeway and a single-loaded corridor connecting the individual cells. Thus, each cell had a view onto the courtyard instead of another cell across the hall. Each pavilion also had a glass-walled day room that opened to the courtyard. Such architecture attempted to break down the large monoliths of the old institutions and replace them with more open facilities to distract prisoners, the
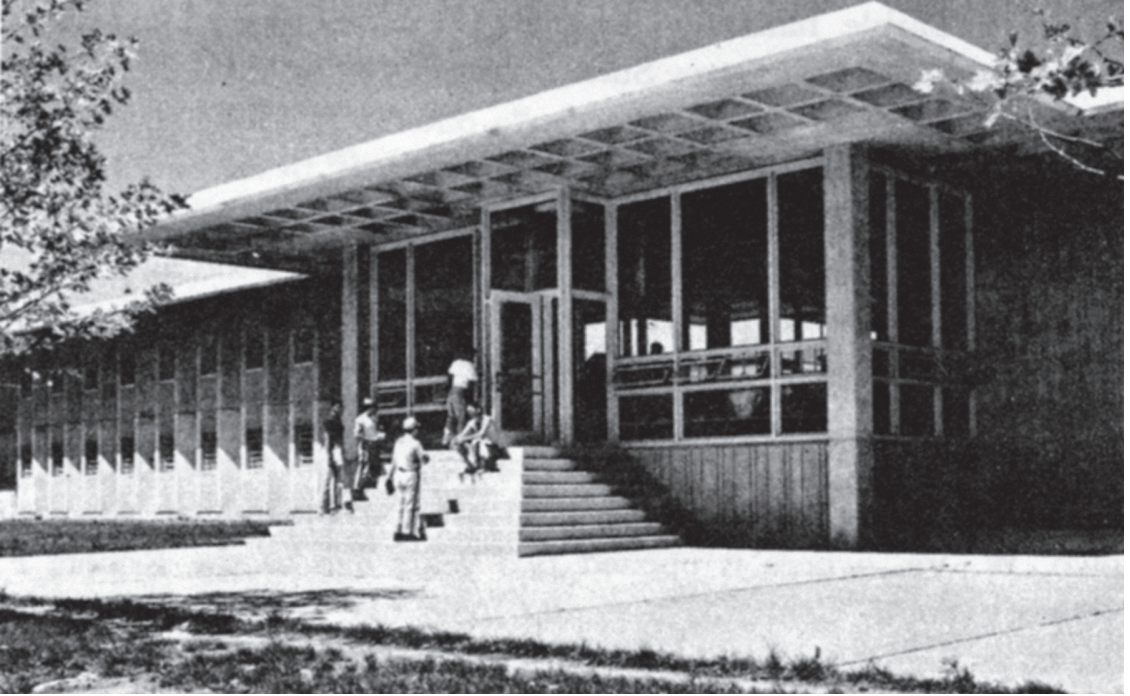
I.2. Gruzen and Partners' Leesburg Medium Security Prison. Frederic Moyer, *Correctional Environments* (Urbana, IL: National Clearinghouse for Correctional Programming and Architecture, 1971), 41.

public, and government from the traumatic experience of incarceration. Von Eckardt ended his column declaring that he felt reassured at hearing "a high official of the Federal Bureau of Prisons speak of 'beds' rather than cells."[2] Reading these responses to the prison riot today, it seems that Huxtable and Von Eckardt vastly oversimplified the complex relationship between prisoners, power, and the designed environment, avoiding social and political explanations for the riots. They projected a faith in environmental psychology that scholars have yet to adequately explain. Why did architects and critics call for behavioral science as the right tool to solve problems such as prison riots? Why was the designed environment an important subject of study for institutions, and why did the design of the architecture seem to be a place to intervene? In the 1960s and 1970s, an era of anti-institutional sentiment, could architecture make these places not "institutional" using psychology?

Architecture in an Expanded Field

In the postwar period, a growing number of managers and experts were interested in learning from the social sciences; sociologists studied group formation and social problems, and psychology looked through quasi-scientific means at

I.3. Soft materials and dormitory-like day bed at Leesburg Medium Security Prison, combined with a toilet paper holder less typical of a dormitory. Frederic Moyer, *Correctional Environments* (Urbana, IL: National Clearinghouse for Correctional Programming and Architecture, 1971), 21.

questions previously considered to be the terrain of philosophy. During the years between 1946 and 1974, the subfield of environmental psychology was formed to focus on empirical methods to study the way one's environment impacts one's mind and behavior. Robert Sommer, a leading environmental psychologist, observed in 1969 that institutions became a key site of exploration for the connection of aesthetics and psyche: "The clearest realization of the connection between environmental form and human behavior is taking place in the institutional field. People trained in hospital administration, education, and business management are aware of the important contributions research and development have made in most aspects of their work. They are surprised to find that decisions regarding the physical plant amounting to tens of millions of dollars are made without adequate information about user behavior."[3] Sommer and other social scientists and administrators were studying concepts of user behavior and began to wonder why architects were not. Those designing and running institutions looked for diagrams, theories, and forms that would demonstrate the way architecture responds to and shapes user behavior in order to carry out the institution's work. These administrators and scholars believed

that architectural form should be shaped to fit the psyche of a patient or prisoner and that form could make it easier to heal patients, reform prisoners, or house residents. As historian Adrian Forty and others have explained, architects of the modern movement pursued several types of functional design, where form was an expression of material, of organic part to whole relationships, or a reflection of the activities of "users" within.[4] Sommer and other psychologists and architects explored the idea that form follows psyche, or what this book will call *psychological functionalism*.

The behavioral research that Huxtable and Von Eckardt examined has its roots in much older theories of modern design, applied in the United States by architects and psychologists in collaboration. The idea of psychological functionalism, the use of form for its alleged emotional and behavioral impacts on occupants, was studied and implemented by a nation in search of new institutional forms to solve larger social problems of health, mental health, justice, and security of the population. Such psychological functionalism uses emotional and behavioral responses to an environment and then proposes design features that will soothe those emotions and alter behavior so that the institution can operate more smoothly.

This book looks at four case studies of institutional typologies that received federal funding, becoming places where architects could experiment with influencing psyche through form. These typologies are arranged roughly chronologically, though the long reform efforts of each typology's adherents do overlap in time, and the typologies do not directly cause changes in each other, though some of the same people worked on more than one typology and some ideas were shared between the typologies. Each chapter focuses on one typology: community hospitals, community mental health centers, therapeutic prisons, and public housing. The final chapter takes the idea of psychological functionalism more theoretically, though still with federal funding, ending with a conversation between applied psychological functionalism and a theoretical or disciplinary psychological functionalism in a new era of architectural theory in the 1970s.

The examination of psychological functionalism in reshaping institutions contributes to an ongoing postwar conversation on politics and aesthetics, including such contributions as Joseph Masco's discussion of the theatricality of the cold war, Jeffrey Lieber's *Flintstone Modernism* on the reconciliation of primal and modern aesthetics, and Avigail Sachs's examination of the role of science policy in shifting the field toward an ostensibly more rational environmental design. In considering the entwining of aesthetics and psychology, this book contributes to the history of two large federal construction programs that are well known but whose architectural component is under-discussed. The postwar Hill-Burton hospital construction program appears in most secondary hospital histories, but few scholars have looked at the buildings. Jeanne

Kisacky's recent book is an exception; a discussion of the architecture's public relations message adds to her assessment that the buildings were not a medical advancement. Similarly, many have looked at the history of the deinstitutionalization program launched by the 1963 Community Mental Health Centers Construction Act, but the architectural vision that accompanied the program has not been considered. Open prisons and crime prevention through environmental design, the subjects of chapters 3 and 4, have also been well examined, but the role of architects and engagement with architectural discourse are rarely brought in. In work like Sachs's, Daniel Barber's on the history of the solar house, John Harwood's history of IBM, or Kenny Cupers's study on housing in France, scholars have sought detailed histories of the way architects were able to contribute to larger changes, avoiding the language of complicity while remaining critical of their purported good intentions.

Sitting at the intersection of large federal construction programs, psychological concepts, and postwar design, the history of the institutional reform in this book recounts the entanglement of architects with the large forces of funded research, social change, and the institutional logic of creating national networks of buildings. Recent work in the interaction of architecture with such large forces includes Jesse LeCavalier's examination of Wal-Mart, Sara Stevens's research on architects who worked with real estate developers, and Daniel Barber's placement of postwar solar houses within the geopolitics of the era. With the history of crime prevention through environmental design and the final chapter on psychological functionalism and the rise of architectural theory, this book shares the current interest in describing controversial ideas without labeling them entirely sinister or innocent but, following Keller Easterling, looking at the innocence of architecture itself as a tool. The thousands of buildings covered by the legislation in this book show that the federal construction programs for institutional reform and expansion gave architects an opportunity to clarify and strengthen an expertise in the way form influences psychology.

Psychology, and Interest in It, Grows

The implementation of psychological functionalism in the postwar era relied on the growing influence of the field of psychology itself. Experts in psychology rapidly gained status in the United States after World War II, as did the number of psychologists practicing. Membership in the American Psychological Association grew from 2,739 in 1940 to 30,839 in 1970, with a similar gain in American Psychiatric Association membership from 2,423 in 1940 to 18,407.[5] The field was young, certainly compared with architecture, growing in the nineteenth century as a hybrid of philosophy and physiology. Many of the first American psychologists had trained in Germany under Wilhelm Wundt, learning from his empirical methods and, as with institutional design, putting those ideas to

use in solving modern problems. For example, G. Stanley Hall was Wundt's first American student, returning to the United States to apply Wundt's methods to educational psychology at Harvard University. George Miller Beard described the symptoms of neurasthenia caused by urban modernity, and figures such as John Dewey, William James, Hugo Münsterberg, James B. Watson, and B. F. Skinner explored social challenges in industrial and organizational psychology. Psychologists contributed to intelligence testing, propaganda, camouflage, and rehabilitation during both world wars.

The concept of using the young—and disputed—science of psychology, or "giving psychology away" was not uncontroversial; proponent of applied psychology George A. Miller declared ambivalence about using intellectual expertise to solve problems of social management.[6] Even so, federal government support for psychological research grew after World War II in the midst of a massive international competition to have the most advanced science and technology. Scholars have studied similar applications in the United Kingdom and in Soviet Russia, where experts explored conscious and unconscious perception of the environment with color studies aiming to increase worker energy.[7] In France social scientists worked to cultivate residents' participation in postwar social housing using form as instrument and representation of an ideal society, continuing the visions of modernist architecture.[8] In the United States, Cold War–era social science was a blend of academic research, policy, and military research that combined philosophical questions of epistemology with direct applications that were at times overtly military or, as with housing and hospital decentralization, related to theories of civilian defense.[9] The Office of Naval Research undertook psychological research until the National Science Foundation was founded in 1950, and through the 1960s the Department of Defense remained a major source of funding.[10] This book joins the conversation about the interaction of government-funded science with architecture but takes a more focused look at the involvement of architects in particular efforts to reform institutional typologies.

Architects had participated in larger government agendas earlier in the twentieth century, learning new roles within bureaucracy and gaining new skills of persuasion. In the 1930s, architects worked in the Supervising Architect's Office (the largest architecture office in the nation) as private commissions decreased in the 1930s.[11] Other architects worked within the Public Works Administration, the Works Progress Administration, and the Resettlement Administration. Assisting with local housing authorities, architects and other experts drew on concepts of hygiene and learned from the field of public health to improve living conditions. Housing experts such as Elizabeth Wood and Catherine Bauer—who would go on to be influential in environmental design at Berkeley—appear as groundbreaking thinkers when viewed from the

postwar period. Similarly, Robert Ezra Park and others of the Chicago School of Sociology prepared foundational studies applying theories from economics to map the "human ecology" of urban neighborhoods.

With the outbreak of World War II, architects sought to demonstrate the value of new mixtures of design and psychology. Sachs presents architects' interest in behaviorism from the 1940s and 1950s onward, depicting a first generation who sought rigorous designs for human-environment interaction and a later generation that engaged with the problems of the urban context of the 1960s. György Kepes and others taught camouflage, while Lazlo Moholy-Nagy adapted his hand sculptures and texture charts to occupational therapy for wounded servicemen and women—as documented by Jean-Louis Cohen.[12] After the war, architects and planners created a strategy of "total planning" from the idea of "total warfare," as described by Andrew Shanken. Through an engagement with business, architects encountered advertising and other tools of persuasion and shifted their role from artists to planners in the guise of the new "Architectural Man." These histories suggest that architects sought mainly to preserve their livelihoods, operating within historical and governmental forces beyond their control.[13] This volume adds to a few excellent histories of the profession, notably Dana Cuff's, adding a case of specialized work.[14] The designers of new institutional typologies had an opportunity to show what architectural design could contribute to the mixture of psychology and government with the advantage of federal funding.

The application of psychological expertise to institutional design was part of comprehensive federal construction and research programs with direct calls to architects and sometimes the employment of architects to help work on problems as with Clyde Dorsett's role within the NIMH in the 1960s. With the 1946 Hospital Survey and Construction Act, architects, administrators, public health, and public relations experts engaged in comprehensive planning of hospital locations and the design of buildings that would work with the institutions' messages of affordability, efficiency, and faith in science. Architects and psychologists worked with the National Institute of Mental Health to craft a new image for outpatient mental health care for the era of psychotropic drugs like Miltown and Thorazine. Designs by William Caudill, Kiyoshi Izumi, and Humphrey Osmond explored imaginative forms for outpatient institutions tailored to the local community but coordinated under a federal umbrella. Waves of prison reform considered a theory of therapeutic penology, enacted in a few states but exemplified in forensic psychiatric centers at Butner, North Carolina, and Gainesville, Florida. The facility at Gainesville attempted to recreate life in small-town America to remove the harmful effects of a prison—not to heal but to determine if defendants could plead insanity or if the institution was making them act in aberrant ways.

New tools of persuasion and influence were available to architects as they engaged with the growing field of psychology and translated ideas about social and spatial components of behavior into drawings, diagrams, and designs. Historians have suggested that overall, architecture refined its search for "total design" in the early twentieth century to "expertise seeking" in the second half. In a history of research at MIT, scholars chronicle the so-called techno-social turn of architects such as Kepes, Kevin Lynch, and Christopher Alexander, who also borrowed psychological expertise. Arindam Dutta describes "an elaborate institutional mechanics of legitimation" through which architects framed their work for other disciplines and administrators of the research economy.[15] Shanken also notes the influence of charts and graphs in planning and adapting practices of visual communication for clarity and broad public understanding of complex issues. Building on Otto Neurath's ISOTYPE (International System of Typographic Picture Education) diagrams after World War I, institutional designers expanded the use of graphic techniques to all manner of notation of social and behavioral information.[16] William Caudill, Oscar Newman, Clyde Dorsett, Sim Van der Ryn, Christopher Alexander, and others used bubble diagrams, charts, and maps to mix the technocratic language of social science with the visual expression of the architect. In the 1970s the fields of environment behavior studies and environmental psychology were formed by hybrid architect-psychologists such as Henry Sanoff, John Zeisel, Clare Cooper Marcus, and others who offered readings of planned buildings in terms of their mental and behavioral components.

In the postwar period, architects used this expertise to design new institutional forms, often low-rise forms that aimed to create legible programmatic elements (circulation, bedroom, entry) as a means of social management. With roots in the nineteenth century, the institutional typologies discussed in this book are a mixture of psychology, government, and form that represent an attempt to pacify through environmental incentives. Earlier examples of environmental management abound, but the cases here differ in two ways: 1) they are attached to federal research and construction programs that aim to serve the whole nation, and 2) they rely on empirical data about the whole population for the location of facilities more precisely than did nineteenth-century institutions. The postwar period of institutional design is different from the interwar facilities because of greater use of new psychotropic drugs, a divided welfare state that unraveled in the mid-1960s, and a large federal research economy that shifted from welfare to crime prevention in the early 1970s.[17] The book focuses on particular government programs to get a close look at certain building typologies, bureaucratic processes, and specific environmental strategies. Although actors such as Robert Sommer, Christopher Alexander, and E. Todd Wheeler show up across typologies, this structure allows this book to focus on the variety

of discourses aimed at managing patients, mental patients, prisoners, residents and architects.

Is It Science?

The term "soft science" is sometimes used as a pejorative by those who champion the "hard sciences" of physics or chemistry, but the boundaries of science are not absolute and unchanging through historical time, and many sciences are "soft."[18] I use the label intentionally to call to mind the stakes of environmental psychology's claim to be science as well as the controversy of that claim in the postwar era. Those who researched environment and behavior faced challenges to the idea that social science could pursue basic research or that it was of equal rigor to the other sciences. The formation of the National Science Foundation was delayed for five years while policymakers and scientists discussed whether psychology could be similar enough to the foundation's basic research aims to merit inclusion in the foundation.[19] Eventually, social science gained a limited role, combined with support from agencies such as the National Institutes of Health, the Department of Defense, and a number of private organizations including the Ford Foundation, the Social Science Research Council—a private nonprofit that often collaborated with government—and the Russell Sage Foundation. Sage and other private foundations had long had an interest in urban problems and housing. Sage, for one, had been funding urban research as part of its mission to improve social and living conditions in the United States.[20]

The possibility of including architectural research in the NSF was discussed when the professional organization of architects met with the NSF in 1959. That year the American Institute of Architects Committee on Research and its Department of Education and Research organized a conference with the governmental science agency. Participants included Ezra Ehrenkrantz of Berkeley, Robert W. McLaughlin of Princeton, and William Ittelson of Brooklyn College.[21] The conference proceedings declared support for research on architecture while also advocating reliance on scientists for knowledge of many basic aspects of the human-environment relationship. The foreword declared: "It was recognized early in the work of the Committee on Research that the fundamentals—knowledge of man, his needs, aspirations, behavior and abilities—knowledge of total environment and how best to help it—were areas outside those of the profession of architecture." The status of architectural research within the government's research economy remained undefined; both architecture and psychology struggled to demonstrate that applied knowledge could have the same status as more abstract sciences with less social and political entanglement.

Bearing in mind environmental psychology's status as a "soft science" helps to keep the focus on the always controversial claim that if architects were simply able to be more scientific and used the "truths" from environmental psychology,

then architecture could solve social problems. Huxtable's argument about the utility of behavioral science for reforming prisons was common and valuable but far from shared by social scientists who were themselves skeptical about the applicability of their findings. At a 1969 conference organized by Oscar Newman and his institute, Lee Rainwater (a former collaborator of Newman) declared that public housing officials found defensible space appealing because they felt under attack and needed an affordable yet proven way to address their problems.[22] Cautioning against looking to social science for that salvation, Erving Goffman, a leading figure in the study of social space and institutions, argued that the field of social science was plagued with failure. He questioned the architects' and administrators' faith in the young science: "Look at us poor social scientists who are caught flat-footed with two minor little disruptions, 1) black militancy and 2) university student disquiet. There was very little that social scientists ten years ago predicted in those regards. We were basically caught flat-footed." He presented his field as severely chastened, and while architects and administrators countered that it was their job to make such choices in light of inadequate information, Goffman argued it was not the role of a social scientist to advocate policy when the facts were still uncertain. An architect might have to make a decision based on limited information, but Goffman lacked faith in the "science" behind those design choices.[23] Newman pressed on undeterred, and his brand of crime prevention through environmental design remains profitable forty years later.

Power through Persuasion

These institutional designs were intended to be humane or "humanized to exert control in an enlightened way that would be more palatable to the public. The term "soft power"—as a reference to the exercise of power by persuasion—initially referred to American diplomacy after the collapse of the USSR. In 1991 Joseph S. Nye Jr. used the term to characterize the strategy of ideological persuasion; the U.S. State Department employed cultural attractions and international institutions in pursuit of "getting others to want what you want."[24] Soft power was successful for two reasons, according to Nye: persuasion appeared not to conflict with the American ideal of freedom, and it was suited to a political context in which exerting force was increasingly expensive. Diplomatic and domestic aims are not identical, but they are not separate either, particularly in the Cold War era of displays of consumer goods at world expos.[25] Many of the cases in this book began as federal officials' efforts to improve major domestic problems, no doubt well aware that the eyes of the world were watching. President Lyndon Johnson's Great Society efforts to fight persistent poverty and urban unrest funded many sociologists and psychologists in pursuit of "poverty knowledge," including the idea of a "culture of poverty" and the psychopathologies of

race and racism.[26] Military funding for psychology had been important during World War II, and historian Ellen Herman explains that the military remained the largest single funding source through the Korean War, producing what one observer called a "not too gentle rain of gold" to enrich the field.[27] The NIMH's Center for the Study of Metropolitan Problems sponsored research on the psychological effects of federal housing policies, most famously Marc Fried's study of the experience of grief after eviction due to urban renewal and Lee Rainwater's study of life in public housing at the Pruitt-Igoe projects in Saint Louis.[28] Federal Hill-Burton hospital construction, the Community Mental Health Centers Construction Act, the Federal Bureau of Prisons, and the Law Enforcement Assistance Administration (LEAA) were products of federal social priorities.

At times these very administrators used skills learned during the New Deal to persuade local populations to accept federal agendas for standardization of the built environment. After his Farm Security Administration work, Frederick Dodge Mott and his colleague Milton Irwin Roemer explained how a theory of "cultural lag" helped them convince communities of federal health care efforts.[29] He continued this work with the United Mine Workers hospitals, built to pacify the union after a major labor dispute in 1946. Following Jane Jacobs's work with *America Illustrated*, a publication of the U.S. State Department's Information agency, Jacobs wrote about the hospitals as affordable, understandable architecture in *Architectural Forum in* 1953 and 1956.[30] She applauded Isadore Rosenfield and others concerned with the impact of modern architectural form on fearful rural patients. Geopolitical power via persuasion is not the same as persuasive architectural design, but the two are not distinct either, when writers like Jacobs use the buildings in international publications. Moreover, the administrators and officials were aware of the way architecture could be viewed by adversaries as a manifestation of the nation's character and affluence. At the opening ceremony for the Mine Memorial Hospitals in 1956, the buildings' importance for "international understanding" was celebrated: "They will hear about these hospitals all over the world, in South America, in Burma, behind the Curtain, how we feel in a democracy about the man who works."[31]

Nye's distinction between cultural and behavioral modes of power remains useful in the architectural context, though design often mixes the two. Institutional environments are both a means of communicating ideology and a means of influencing behavior. This dual mode is evident in the design of prototypical community hospitals in the 1950s, where architects focused on the first mode in facade design and on the behavioral mode—or what I call "psychological functionalism"—when designing the interiors. Hospital facades communicated the core values of integrity, openness, efficiency, and science while their interiors considered the physiological and psychological influence of daylight, furniture

placement, and circulation. Community mental health centers in the 1960s were also tasked with creating an image for the program that would suit the various communities they served. Soft prison cells aimed to pacify prisoners while communicating attention and preserving dignity. Defensible space aimed to trigger a natural and subconscious motive but also to remove the graffiti and other stigmata that made the place appear unsafe. In the Institute for Architecture and Urban Studies project too, the aim was to use structuralist theory to understand how to craft an image of place to suit the population.

The history of propaganda would suggest that the exertion of power via persuasion is as old as humanity, but the use of the term and the "science" of influence took off during World War I and World War II. The name "Cold War" was itself the work of one of the foremost experts in public relations and public opinion, Walter Lippman. Persuasion requires an understanding of the audience, something psychologists sought through rigorous study of the human mind. Lippman argued that various populations react to the pseudo-environment created in their minds with limited information. To govern softly, via persuasion, public relations experts would help guide public opinion toward desired ends using what they could from the psychologist's scientific exploration of mind and behavior. The public relations consultants advised hospital administrators and architects on locating and presenting hospitals to rural and urban communities in the 1950s before environmental psychology research broadened its studies from behavior in military barracks and aerospace environments to studies of geriatric and mental health wards.

The later period of the governmental and institutional changes described in this book are contemporaneous with Michel Foucault's analysis of techniques of power through psychology and environment. These were the years in which Foucault began to write about the self-restraint and alienation of inmates, circa 1965, and later to write about the tendency of neoliberal regimes to govern through environment and incentives. Thus, the cases examined here document the phenomena that Foucault notes in his lectures on the birth of biopolitics in Germany and in the United States. He contextualized the trends in terms of a larger governmental project in his lectures on the *Birth of Biopolitics* from 1978 to 1979, where he analyzed what he saw as a growing American neoliberalism and a tendency to govern through environment. Asylums, hospitals, and prisons were spatial symptoms of social ideas in the eighteenth and nineteenth centuries, places where states sought to manage and attend to their populations in addition to controlling them via spectacle and violence. In *The History of Sexuality*, Foucault describes institutions as combinations of two sites of government—the individual body and the population.[32] These *agencements concrets* or concrete arrangements create social and architectural technologies to optimize the capacity of a population and to make government more efficient in an increasingly

urbanized age. Self-control is combined with medical and psychiatric authority, while violent, disciplinary modes of power continue as rare threats.

In these environments, "action is brought to bear on the rules of the game rather than on the players"; in these postwar American institutions, the design of the system reflects the vast federal funding poured into environmental psychology and translated into form by architects.[33] This particular mode of power was attuned to the character, personality, or type of inmate, patient, or resident. In other words, architects created different power tailored to the folks within each institution, whether a nineteenth-century mental hospital with graded wards or a 1960s prison. In the therapeutic prisons of the 1960s, the aim was not to normalize population differences but to apply ever more elaborate incentives in the environment in what Foucault called the "open secret of social management." In so-called voluntary or open institutions such as community hospitals, consumer-like subjects were persuaded to enter and treated to spatial and pharmaceutical controls intended to secure their compliance but also their eventual return and money. If that sounds like some religious organizations (and some community hospitals continued to have patronage from religious institutions), consider reading these soft institutions as environments in which human science was in the role of savior.

In *The Magic Mountain,* Thomas Mann paints a lyrical portrait of life in a modern institution; he describes the chronic passage of regimented time, the intimacy and coldness of periodic medical testing, and the eradication of simple diagnoses like "sick" or "well."[34] Mann's account of the management of life in the sanatorium shows the concrete apparatus of biopolitics, the material culture of rooms, hallways, balconies, lunch rooms, paperwork, and x-ray equipment that exert power via knowledge. The environment created by these tools allowed a shift from rule by punishment to the expert administration of life.[35] Influence is exerted by knowing the mind and the capacity of the subject and the population rather than by threat or exertion of force. Many bodies of knowledge came together to produce institutions such as Mann's sanatorium, which he used as a microcosm of modern society.

Because of the focus on federal construction, beginning with the modernization of the U.S. hospital network after World War II, to some degree this book presents a uniquely American story. The funding opportunities examined here are often tied to particular presidential agendas or particular government programs, though they also reflect shifts in funding priorities, as with the expansion of science funding during the space race in the 1950s and diversion from urban research necessitated by the expensive war in Vietnam, as President Lyndon B. Johnson left office and President Richard M. Nixon entered. The latter shift was felt by Newman and others who heard about generous NIMH grants and sought them out, only to be directed to the Law Enforcement Assistance

Administration. The unraveling of the liberal welfare state happened somewhat differently in the United States, the UK, and France, for example, but the larger trends of government support of social science research extended to the UK. Environmental psychology retains an appeal in Australia and elsewhere. Postwar hospital construction programs were also important in the UK, and internationally, the World Health Organization encouraged rural hospital construction and rebuilding after the war. Deinstitutionalization of mental health and anti-psychiatric sentiment were common to the United States, UK, and France, and struggles over postwar housing design were felt internationally. But where the United States may be the least typical is in the prison context; there were far more prisons per capita in the 1960s in the United States than in other countries. The numbers have only risen since.

Racial difference and racial injustice in the American context form a loud void in the documents created by administrators and architects. The Hill-Burton hospital standards have been credited with integrating hospitals after 1965, but most of the hospitals discussed in the book would have been segregated by ward, if not entirely closed to non-whites. Community mental health centers were accused of unequal treatment and of being urban field stations for the therapeutic state, targeting young, urban, minority populations as a means to "stamp out the riots."[36] With prisons and crime in public housing, the discussion of race is rarely explicit but impossible to ignore. Some reformers may have been trying to avoid a controversial topic or conceal their racial biases, or they may have been motivated by a sentiment that ignoring race was enlightened.

Studies of the American welfare state have considered its exceptionalism among other developed countries, have relayed stories of political failure in enacting legislations like national health insurance, and have focused on political successes during the New Deal, the GI Bill, the War on Poverty.[37] The United States does not have a consolidated, generous welfare system as some other countries do, and the reality of this divided or franchise state poses challenges in tracking state action. The results can be more diffuse, less visible, and somewhat less controlled by the government. These private-public partnerships are usually more selective and less redistributive, and for those of us studying aesthetics, such programs pose a challenge because they are harder to see, much less characterize. Yet architects and architecture play an important role in these divided state programs, and the architecture of government social programs in the United States has developed an awareness of public relations and environmental incentives that attends to the various segmented and diffuse audiences.

Theoretical treatments of the relationship between American architecture and American politics also point to productive connections between architecture and politics in general. Reinhold Martin has argued that Peter Eisenman's turn to deep structures circa 1973 was related to President Richard M. Nixon's

fostering of environmental legislation. Martin contends that both actions sought a universal plane able to transcend the deep divisions of the early 1970s Vietnam War era, urban decline, and persistent racial inequality. Similarly, Martin places Nixon's "governmental speech act"—unhitching the dollar from gold—next to Gilles Deleuze and Félix Guattari's critique of Chomskyian disregard for the inextricable ties between pragmatic, semantic, and syntactic elements of language.[38] In other words, just as Nixon was able to use his power to shift the referent of the dollar, so too did Deleuze and Guattari point out that relations between signified and signifier are often and largely fixed by pragmatic or power relations. But what I have wanted to ask is how we might go beyond such arguments, which at base simply state that "it was in the air" to probe the mechanisms that link federal priorities and construction programs with the opportunities made available for architectural expertise.

Organization of the Episodes

This history of institutions opens in 1946 with the passage of a major postwar hospital construction program aiming to integrate and equalize hospital beds across the United States. The story continues to 1963 with the signing of the Community Mental Health Centers Construction Act by John F. Kennedy, his assassination, and the subsequent inauguration of Lyndon Johnson. Under the banner of the Great Society, social programs grew as Johnson pursued many of the projects started with Kennedy's New Frontier. These programs aimed to extend the postwar affluence to all Americans, including elevating the nation's culture to the level of its technological and economic greatness. Along the way, Johnson's Great Society programs extended governmental influence into more areas of everyday life, largely in the arena of health, education, and welfare. These social programs floundered, however, as the war in Vietnam sapped funding and as Johnson announced that he would not seek reelection. As Nixon entered office, the focus of reform shifted to a nascent neoliberal perspective more concerned with privatizing programs and fighting crime. The field of architecture followed a similar transformational arc, with ambitious, energetic schemes for housing and urbanism giving way to more specialized, abstract, and even cynical projects. By 1974, when this book closes, the nation had seen the aforementioned abolishment of the gold standard, the construction of Minoru Yamasaki's World Trade Center, and the Watergate scandal. However, many of the projects funded in the earlier era of optimism were delivered in the Nixon climate.

The chapters are arranged as episodes in the larger tale of psychological expertise, moving out of hospitals and laboratories and into everyday life and eventually informing the intellectual discipline of architecture itself. Each chapter addresses a different institutional environment and a different

collaboration between architecture and the human sciences. The episodes are presented chronologically, though with substantial overlap. The chapters are also arranged from the most medical environment, through psychiatric, and to the housing and urban research as the most everyday. While chronological, the typologies are not meant to be causally linked, in part because they happened somewhat at the same time and the tale is simply too complex to bear such an argument. Rather, the typologies examined here present a range of bureaucratic arrangements that supported collaboration between architecture and psychology: two federal construction programs, a series of state penology programs, local housing authorities, and then the research economy itself.

The first chapter introduces the challenges of federal programs to build a national network of modern hospitals in the face of great regional and racial disparity in quality of hospital care between 1946 and 1965. Insights from public health, public relations, and psychology research informed the problem of constructing hospitals in rural, low-density locations where the population had little experience with an adequate hospital or an integrated hospital. This chapter presents a story of modernization and adaptation of techniques for managing what Frederick Mott called the "cultural lag" through steel and glass architecture. The modern hospitals had clear patterns of entry and circulation as well as brochures for patients to explain life in the hospital. The population knowledge and design tools used in the construction of community hospitals set the stage for the chapters that follow with their own tales of architecture as pacification in mental health, prisons, and public housing.

The second episode concerns the shift in the place of psychiatric care and the collaboration between architects and psychologists that led to the creation of open psychiatric institutions. The 1963 Community Mental Health Centers Construction Act was signed into law by President Kennedy and implemented by President Johnson during an era of optimism and energy on the part of the American government. The program aimed to build two thousand new, open institutions that would combine outpatient care with other community functions such as childcare, taking advantage of a new era of psychiatry made possible by advances in psychopharmacology. The program was administered by the NIMH, which created an Architectural Consultation Section (ACS) headed by Clyde Dorsett, in order to develop guidelines for the new facilities and to foster design research through collaborations between psychologists and architects.

Chapter 3 follows the development of psychologized environments even further from the clinic, into the prison environment. Advocates of reform saw the community mental health centers as a model and the Federal Bureau of Prisons and other agencies funded experimental prison facilities that were open, as at Leesburg, Virginia. Architects engaged behavioral conditioning and

confronted the accusation that buildings themselves were the problem and the best thing to do was not build at all.

The progression of psychological expertise into unspecialized, everyday environments continues into the fourth chapter, which covers one of the best-known architectural theories to use psychology: Oscar Newman's theory of defensible space. The theory that urban housing could be made safer with minimum expenditures of money and effort by further privatizing and segmenting the grounds struck some as self-evident and others as an offense to the previous generation's work to create collective, public housing. Yet Newman was in some ways defending the ideals of modern architecture, which he encountered firsthand as he chronicled the final conference of the Congrès International d'Architecture Moderne in 1959, bringing those ideas home to a context of violence in the streets and decaying urban culture.

Chapter 5 chronicles psychological functionalism as it inhabited research institutions, showing the influence of larger institutional formations on the idea itself as a divergence grew between applied and theoretical architecture. Looking at applied work by Newman and Christopher Alexander in contrast with NIMH-funded research by Peter Eisenman, Mario Gandelsonas, and the Institute for Architecture and Urban Studies, the last chapter shows attempts to influence psyche via form, as the idea had matured and a new phase of thought was opening. With two distinct intended impacts on their viewer's psyches, these architects sought to create a system of rules that would guide design. These increasingly abstract ideas posed as a kind of "basic research" in architecture that operated within a new research economy. Systematic, social science–inspired techniques sought to explain how to design a better urban environment. Attempting a universal or abstract theory of the communication between user and environment, Eisenman's complex intellectual constructions continued in the next era of theory and diverged farther from the functional, professional uses.

The institutional designs in the book add to Colin Rowe's definition of modern architecture as an architecture of good intentions, an ambition to use reason to make a better architecture for a better society. The conclusion speculates that reframing architecture's social project to include the influence of psychology knits together two histories that are more often portrayed as separate. Bringing the history of government programs together with disciplinary and aesthetic studies adds to the move made by Reinhold Martin and others to show the place of architectural theory in an age of biopower, an age of closer and closer attention to the population and greater entanglement of environment and power. Martin's study of Peter Eisenman's potential relation to President Nixon asks whether psychological functionalism was a tool of institutional management in service of federal priorities; I ask a similar question. If governing

requires greater attention to the composition of the governed, ranging from demographics to dreams, then how has architectural theory tackled this amorphous area and produced forms that convey attention to those dreams, desires, and demographics? The knowledge of architecture and its functioning in the minds of the inhabitants is not only useful to or used by those who would govern; after the 1970s business has enthusiastically embraced the temptation to use design to influence psyche. The study of environment and behavior used to pacify prison inmates can now be found applied in retail, entertainment, and home environments.[39] To start to answer the question of resistance to this subtle influence over psyche, we must ask, how did we get here?