



Tower and Slab

Histories of global mass housing

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1 Social Reform, State Control, and the Origins of Mass Housing

Housing and the Social Question

The social question, formulated with increasing pressure in all industrializing countries since the mid-nineteenth century, was fundamental for mass housing programs. Among the diverse groups of social reformers were radical aristocrats, bourgeois philanthropists, and labor activists, who shared an awareness of the miserable living con-

ditions in which the industrial cities' lower two-thirds had to live, and the moral obligation to change them. The expressed commitment of the upper and middle classes to the poor went along with a protection of their own interests, including social stability and the prevention of workers' uprisings. From the very beginning, social reform oscillated between charity and domination. Measures to house and feed the needy went along with more or less coercive methods to categorize, regulate, and discipline the masses, to enforce moral rule and social hygiene. Like any type of assistance, social welfare helped the underprivileged, but at the same time strengthened the rule of the dominant groups and restricted the receivers' agency.

European countries started to introduce both state- and company-sponsored assistance around the turn of the twentieth century, and by the end of the Second World War had established comprehensive systems of social welfare of which mass housing would become a part. In Germany, the Verein für Socialpolitik (Social Policy Association, founded in 1873) united the most eminent proponents of state intervention in social and economic matters, who at the same time rejected social-

ist ideas. In France, the Musée Social (founded in 1894) came to be an important forum for similar approaches. General medical insurance for German workers was introduced in 1883, in the same year in which the Social Democratic Party was officially forbidden. In France, certain medical assistance was provided free of charge from 1893 and in Britain from 1911. The Société française des urbanistes was founded in 1911 and the British Royal Town Planning Institute in 1914; the improvement of dwelling conditions subsequently became the backbone of municipal politics. In the United States, the “Progressive Era” of the 1890s and early 1900s spawned legislation on zoning, construction, and labor, and established the primacy of the state to regulate a variety of urban matters. Along with the rise of the social sciences, the smallest common denominator across national borders came to be the increasing reliance on comprehensive planning and state intervention. Policy relied mostly on quantitative analysis and scientific calculation to determine human needs and guarantee efficient remedy. The objective was to achieve what has never been achieved since the first cities were built: to provide adequate living conditions for all

social classes.

These goals entered the architectural debate at the turn of the twentieth century. In the rhetoric of the modern movement in France, Germany, Britain, Russia, and the United States, housing assistance for the needy soon became inseparably connected with modernist architecture and urban planning. In France, Tony Garnier developed his proposal for a *cit  industrielle*, in which the members of an industrialized socialist society would live in modular concrete homes. His ideas, which he worked out around 1900, anticipated the modular developments that were later built in many countries.¹ In the years after the Russian Revolution, visionary Soviet theorists such as Leonid Sabsovich, Mikhail Okhitovich, and Nikolai Milyutin thought of a thoroughly restructured urban landscape as the basis for a socialist egalitarian society. In Germany, architects such as Bruno Taut, Richard Riemerschmid, Hermann Muthesius, Hannes Meyer, and Peter Behrens thought of mass housing construction as the only way to mitigate the housing shortage and increase dwelling comfort for the disadvantaged. They took up the ideas of housing reformers such as Otto Schilling and

Rudolf Eberstadt. Arguably the most consequential result of these efforts was the increasing foundation of public utility housing enterprises from the 1920s onward. All together believed in a strong and benevolent state that was to provide the regulatory framework for architects' activity, enforce minimum construction standards, and curb the most detrimental side effects of the free housing market.² These essentials could nevertheless be provided by a diverse array of regimes from monarchy to socialism, and the political convictions of the housing reformers were accordingly diverse.

The Origins of Industrialized Construction

Industrialized construction as was developed in the early twentieth century eventually became the fundamental technology for mass housing in most countries and simultaneously a stylistic principle for modern city design. Even in those contexts where industrialization did not become dominant—such as in Brazil or India—the underlying principles of these technologies inspired repetitive chains of production and determined

the aesthetics of new design. There are two main characteristics of industrialized buildings as opposed to traditional site-built homes. First, they are assembled from prefabricated parts, and second, they are not constructed individually, but rather in series according to a rationalized process. Industrialized construction, in this sense, is an automated scheme that increases productivity through seriality and standardization. This definition also includes, for example, mobile homes or trailers and is not necessarily limited to multistory buildings. In any case, such a form of building not only invites production at a large scale but rather requires it, since the cost of the development of rationalized processes is very high and can only be amortized through large output that maximizes the cost-benefit rate.³ The definition of industrialized construction is imprecise to a certain degree, since the difference to traditional construction is gradual rather than categorical. Most traditional site-built homes employ an array of prefabricated parts. Windows and doors are produced in series, beams and posts are cut in standardized measures, and the brick can be deemed a form of prefabrication. Similarly, the traditional divisions of labor,

for example that between bricklayers and roofers, already means a rationalization of workflow. However, industrialized construction as practiced by modernist architects in the early twentieth century refined both prefabrication and streamlining of procedures to an unprecedented degree and wedded them to their vision of a new society built on social equity. Hence in popular use industrialized construction is often connected not with a particular technology but rather with particular design principles and thus modernist architecture as such.

Some forms of prefabrication have been known since antiquity. Findings from Roman shipwrecks suggest that the elements for entire buildings were prefabricated at certain quarries and then transported to the construction site.⁴ Colonial expansion in the nineteenth century played an important role in the improvement of prefabrication, since it brought about the necessity to provide shelter quickly for large amounts of people in remote places.⁵ Along the same lines, military technology provided the basis for the civil use of mass-produced materials.

The industrialization of the construction process as we know it today was developed much later

than that of materials. In the late nineteenth century, the engineer Frederick Winslow Taylor (1856–1915) invented scientific management, rationalizing each separate step of production. Henry Ford (1863–1947) applied Taylor's principles in his industrial plants. From 1913, his Highland Park Factory in Detroit produced motorcars on assembly lines. In the following decades, Fordist production became the model for the industrialization of the construction industry.⁶ Flows of work were refined according to scientific rules, and similar buildings were produced in great numbers. The French term *grands ensembles*, and its German equivalent, *Großsiedlungen*, for large housing projects reflects the imperative of scale that lay at the heart of these industrialized operations.

New materials and technologies developed in the late nineteenth century furthered the industrialization of construction. Two innovations were particularly consequential: steel frames and reinforced concrete. As a construction material, concrete was known by the ancient Romans, but fell into disuse in later centuries. The experiments of the French engineer François Hennebique were crucial for the construction of concrete homes.

Hennebique relied on the experiments of the gardener Joseph Monier, who stiffened his cast planters with wires for additional stabilization.⁷ His 1892 patent on reinforced concrete opened the use of that material for large, industrially produced buildings. Other pioneers of concrete construction were the architect Auguste Perret, who in 1903 built his first all-concrete apartment house on Rue Franklin in Paris, and the Liverpool city engineer John Alexander Brodie, under whose auspices the apartment buildings on Eldon Street were built from prefab concrete slabs in 1905.⁸ Like the construction of prefab wooden houses, concrete prefabrication was also furthered by colonial expansion. The French company Lippmann, Schneck-enburger & Cie in Bastignolles near Paris, which pioneered the construction of houses from hollow concrete slabs, first and foremost exported its products to the French colonies, starting in 1860 with the Caribbean island of St. Thomas.⁹ Their patents were taken over in 1893 by the Amsterdam firm Wittenburg, which also produced for export to overseas territories.

At the turn of the twentieth century, concrete slab construction was improved in England, Germany,

France, and the US. Thomas Edison, the inventor of the lightbulb, experimented with the use of cast concrete. A series of two-story single-family homes were built in Philipsburg, New York, in 1909 according to his technology. The New York engineer Grosvenor Atterbury was best known for the further development of prefab concrete slabs. In 1908, he developed a construction system consisting of one-floor-high panels that were hollowed out for better insulation. Most famous was his Tudor-style townhouse community, Forest Hill in Queens, New York, which he designed from prefabricated concrete panels,¹⁰ and his 1918 design of two-story single-family homes in Long Island, New York.¹¹ Paul Schmitthenner's traditionalist Garden City in Berlin-Staaken (1914–17) was built according to the latest development of standardization based on only five types.¹²

By 1920, the competition between steel frame and reinforced concrete construction was decided. In the eyes of most builders the advantages of concrete—it was inexpensive, resistant to corrosion and fire, and extremely stable—outweighed the disadvantages of its heaviness and the difficulty of transporting it. Many scholars also stress the

political aspects of this development: the military industry depended on steel, which in many countries had become a rare commodity during the First World War.¹³ The path was therefore set toward concrete as the preferred material for multistory homes. The age of concrete was about to begin.

The Modernist Movement in the Interwar Period: The First Mass Housing Developments in Germany, France, and England

In the decade before the First World War, when mass-produced lamps, pens, typewriters, and automobiles already proliferated in British, French, and American cities, buildings were still erected as they had been a thousand years earlier: one at a time, and each by an individual builder. The only concession to the industrial age was the use of repetitive plans and façade models that were similar but not identical—to date the main feature of the now cherished late-nineteenth-century neighborhoods in New York, Paris, Berlin, and other cities. This apparent anachronism did not go unnoticed. In Germany and France, architects such as Walter Gropius (1883–1969), Ludwig Mies van der Rohe

(1886–1969), and Le Corbusier (1887–1965) realized that traditional construction was not able to generate the output required by massive country-to-city migration and raged against obsolete building methods. Industrialization, for them, was the mandate of the time. Supported by seductive images, they propagated standardized construction as both superior technology and signifier for modern life.

In Germany, where the Werkbund debate on standardization had peaked before the First World War, industrialized construction was increasingly brought to practice from the end of the war. Traditionalists such as the Staaken Garden City designer Paul Schmitthenner (1884–1972) played a similarly important role as the modernists associated with the Bauhaus. Walter Gropius and many of his colleagues espoused the aesthetics of the machine-produced good. They not only promoted standardization as the precondition for efficient factory-based production, but also cultivated a particular formal language that for its teachers embodied the spirit of industrialization: raw materials, geometrical shapes, and lack of ornamentation. The Swiss architect Hannes Meyer (1889–1954), Gropius's

successor as director of the Bauhaus and one of the school's most radical architects, assigned such design a normative value, pointing out that typization and standardization were “the alphabet of socialist architecture” and most appropriate for a society without class differences.¹⁴ Meyer held that the demands of the proletariat were absolutely equal and therefore required normalized buildings that were exclusively determined by their function. For him, a building was “neither beautiful nor ugly, just right or wrong.”¹⁵

The new architecture was to be mass-produced in factories. In his 1926 article *Der große Baukasten* (The Great Construction Kit), Walter Gropius famously called for the industrialization of the entire construction industry.¹⁶ Together with his colleague Konrad Wachsmann (1901–80) he developed numerous prefab construction systems.¹⁷ For Ludwig Mies van der Rohe industrialization was “not so much a question of rationalizing existing working methods as of fundamentally remolding the whole building trade.”¹⁸ Mies van der Rohe thus called for a “total destruction of the building trade in the form in which it has existed up to now” and an adaptation to industrially produced materials.¹⁹

Other Bauhaus teachers formulated similar ideas. Ludwig Hilberseimer (1885–1967), who taught at the Bauhaus from 1929, thought of modular new towns,²⁰ and Marcel Breuer (1901–81) developed various design schemes for modular housing. For them, building high blocks was a mandate of the time and supported by scientific calculations.²¹

The new technologies were carried out on an urban scale. In 1924 Martin Wagner (1885–1957) carried out the Splanemannstraße development in Berlin, the first *Siedlung* (residential development) from large precast concrete slabs. It inspired other ensembles of standardized residential buildings in Germany, such as Gropius's model ensemble in Dessau-Törten (1926–28) or the Horseshoe Development (1925–31) in Berlin by Wagner and Bruno Taut. These projects were heavily influenced by the British garden city movement, which since the late nineteenth century had promoted the idea of a lifestyle that remained connected with nature within modern industrial cities. Arguably the most successful serial developments of the 1920s were Ernst May's *Siedlungen*, which he planned during his tenure as municipal official for residential construction in Frankfurt between 1925 and 1930,

and which included the serial developments in the Frankfurt suburbs of Praunheim, Westhausen, Bornheim, Römerstadt, and Niederrad. These *Vorstadttrabanten* (suburban satellites) were the first housing developments that constituted entire neighborhoods on the urban periphery; at the same time they pioneered the use of prefab concrete elements.²²

Like their German colleagues, the architects in the newly founded Soviet Union also theorized principles of rationalization and standardization as a solution to an exacerbated housing shortage—and as the fulfillment of the socialist promise of equal housing standards for everyone. They celebrated industrialization with great enthusiasm, and an industrial aesthetic ranked high in their proposals. In the late 1920s, Moisei Ginsburg directed the Department of Typed Buildings at the State Committee for Construction in 1928, developing modular housing from industrial materials. His Gosstrakh Apartments (1926) and Narkomfin Apartments (1929) in Moscow embodied his ideas of transforming society through serial architecture.²³ At the same time, Andrei Burov and Boris Blokhin developed construction techniques

from prefab blocks, and Nikolai Ladovski proposed buildings composed of entire prefab dwelling cells.²⁴ The rationalization of construction went along with a debate over the dwelling conditions not only for underprivileged groups but for the whole of society and led to investigations of floor plans, kitchen arrangements, and room sizes. During the 1930s, when Stalin suppressed the architectural avant-garde, experiments in the industrialization of construction nevertheless lingered on. At the Institute of Architecture in Moscow, Burov continued to investigate large-panel construction and eventually laid the technological groundwork for the architecture of the post-war era. After Stalin's death in 1953, Nikita Khrushchev forcefully promoted industrialized architecture and made it the most widely used form of construction in the Soviet Union.²⁵

In France, Le Corbusier had experimented with modular house types since the end of the First World War. The most significant results were his two-story Maison Citrohan model (1920–22), and, most famously, his utopian Voisin Plan (1925), in which he proposed the rebuilding of Paris with modular high-rises in a park landscape.²⁶ In his

1925 book *Vers une architecture*, he called for a house that was mass produced like a car or ship and acted like a “machine for dwelling.”²⁷ Le Corbusier advocated a completely restructured city and framed height, light, and geometrical order as the salvation from the dirt and chaos of existing urban agglomerations. His city of modular towers in a park became the emblematic model for a whole generation of architects—for later critics such as urban historian Peter Hall, this squeaky-clean vision evidenced an anal character, inherited from his family of Swiss watchmakers.²⁸ In 1933, Le Corbusier authored the Athens Charter, which combined many positions shared by architects united in the Congrès internationaux d’architecture moderne (CIAM) and propagated centrally planned mass construction according to rational principles. In the early 1930s, this thinking inspired the first large housing developments in the Paris outskirts: Le Plessis-Robinson (1924–39) by Maurice Payret-Dortail, Jean Demay, and Jean Festoc and the Cité de la Muette (1931–34) by Marcel Lods and Eugène Beaudouin.

The first mass housing developments in Britain were also completed in the 1930s. Among the ear-

liest were the eight-story Highpoint One Apartments in London by Berthold Lubetkin (1933–35), who was a Russian émigré and in the 1920s had studied at the famous Moscow school Vkhutemas, which was founded by Moisei Ginsburg.²⁹ Other significant developments included Wells Coates's nearby Lawn Road Flats in London's Hampstead (1934–35), the six-block development Pullman Court in London by Frederick Gibberd (1936), and the social housing complex Quarry Hill in Leeds by R. A. H. Livett (1938, demolished in 1978).³⁰ These ensembles were rather small: Pullman Court had approximately two hundred units, and even Quarry Hill comprised less than a thousand. They were also not very high by later standards; only Highpoint One Apartments had eight stories, and both Lawn Road Flats and Pullman Court were only five stories high.

In the US, mass housing construction began in the 1930s, when Roosevelt's New Deal strengthened the role of state in the provision of housing. The first state-sponsored projects went up in New York: The dumbbell tenement-style First Houses on the Lower East Side (1934) and the Harlem River Houses (1936) were built as compounds separated

from the street. Here, serially produced apartment blocks were also built by private companies and designed for the middle class, such as Stuyvesant Town/Peter Cooper Village on the Lower East Side (1943–47), which closely resembled Le Corbusier's model of a cruciform tower in the park.

While the few German *Siedlungen* of the inter-war period, the first *grands ensembles* in France, the industrialized buildings of the Soviet avant-garde, and the early British and American standardized blocks of flats only made a small contribution to the relief of the housing crisis, they evidenced a changing attitude. The works of the great social reformers had caught on: in most European countries and in the US the majority supported the regulation of the housing market. In light of a shortage that was enhanced by the destruction of the Second World War, state-subsidized mass housing came to be universally accepted as the most efficient answer to the challenges posed by social plight: it became synonymous with modernization.

The Post-War Era: Mass Housing Goes Global

In the post-war decades, mass housing construction reached its peak. The material qualities of reinforced concrete improved considerably in terms of insulation, stability, and endurance, and industrially produced buildings grew to an unprecedented size.³¹ Serial apartment blocks were undoubtedly the most popular method of construction. If in the 1960s one had asked a random Swedish, French, or Russian schoolchild to draw a new house, he or she would be likely to have produced a rectangle with repetitive windows and not a pitched-roof home with scribbled tiles and a chimney. In countries such as South Korea, China, or Singapore, standardized towers and slabs became home to large parts of the urban population. Triggered by ambitious state-sponsored programs, these developments were designed to ameliorate the living conditions of common people who in most places continued to suffer from misery and overcrowding, and at the same time conspicuously stress that government's commitment to modernization and progress.

Mass-produced apartment blocks spread across cultures and climate zones; the right to a dignified dwelling was promoted more effectively around

the world than democratic elections, freedom of speech, or racial equality. A strong state and egalitarian goals, the fundamentals of mass housing, were endorsed across the political spectrum by communists, nationalists, or catholic reformers. The social democratic government in Sweden cherished them in the same way as the nationalist-conservative regime in France. While in most countries the promise to provide modern kitchens, central heating, and running water was only fulfilled for a part of the population, all around the world the respective programs considerably changed the structure of large cities and the characteristics of urban life.

Towers and slabs were built on all five continents. In Europe, the prewar tradition of social housing was only briefly interrupted during the Second World War and resumed immediately after. Prefab construction proved to be the most efficient way to repair a continent in shards, and many a destroyed city was rebuilt from repetitive concrete parts. In England, state-owned council housing for poor residents was built denser and higher, with the ten-story mark reached around 1948.³² Among the most famous were the Churchill Gardens in Lon-

don by Philip Powell and Hidalgo Moya (1946), and the first point block in Britain, The Lawn in Harlow New Town by Frederick Gibberd (1950).³³ Hamburg, one of the most heavily damaged cities in Germany, sponsored the construction of the 16-story Grindelberg houses by Bernhard Hermkes and others (1946), the country's first residential high-rises.³⁴ Other projects appeared in the 1950s on the urban peripheries, like the Sennestadt in Bielefeld by Hans Bernhard Reichow (1956), or the Neue Vahr in Bremen by Ernst May (1957)—all were subsidized directly or indirectly by public agencies. France started its state-supported construction projects in 1951 with the formation of *zones d'urbanisation prioritaire* (ZUP, zones of prioritized urbanization), on which modular residential high-rises were erected. The Cité des Quatre Mille in La Courneuve outside Paris (1956) and the Les Minguettes development outside Lyon (1967) were among the most famous. In some European countries, housing culture changed radically in a staggeringly short amount of time. Vällingby new town on the Stockholm periphery was inaugurated in 1954. Between 1965 and 1974, Sweden carried out the ambitious *Miljonprogrammet* (Million Pro-

gram), which was initiated by the ruling Social Democratic Party as the backbone of the Swedish welfare state, and which spawned more than a million dwelling units in a country with less than nine million inhabitants.³⁵ The Netherlands also built numerous state-subsidized housing developments, most famously the Bijlmermeer (begun 1966), which was to house one in every eight Amsterdam residents in one single development.³⁶ Industrialized construction became particularly widespread in the Soviet Union and its Eastern European satellite states. Soon after Khrushchev launched the program for the industrialization of the Soviet construction industry in 1953, tower and slab developments showed a higher degree of homogeneity than those in capitalist countries. The socialist planned economy provided the ideal conditions for standardization and high output. This applied for the Soviet Union in the same way as for Hungary, Poland, or East Germany. In all those countries, buildings were assembled from factory-produced concrete slabs that had been designed to be as simple as possible and combined structure, infill, and finishing. During the 1960s and 1970s, the few elements of any given series, such as the famous K-7

in the Soviet Union or the WBS 70 in East Germany, were employed nationwide without variation.

The political division did not stop the connections between the Eastern and Western blocs. In 1954, a group of French architects visited the German Democratic Republic, and ten East German architects in return went on a research trip to France, where they visited the communist governed *banlieues rouges* (“red suburbs”) of Paris, Le Corbusier’s Unité d’Habitation in Marseille, and the reconstruction of Le Havre.³⁷ The industrialization of the Soviet construction industry was favored by the purchase of two Camus factories in France in the late 1950s.³⁸ There was also growing exchange between Europe and other continents. As early as 1952, Soviet engineers were invited to China and oversaw the first experiments with prefabrication.³⁹ The architect Kisho Kurokawa, a pioneer of modular construction in Japan, traveled extensively to the Soviet Union in the early 1950s.⁴⁰ British professionals worked in Singapore and Hong Kong, and Asian, African, and Latin American architects studied in England or France. Their projects, however, can barely be deemed an offspring of European urban planning traditions, but rather consti-

tute a complex adaptation of a discourse that by 1960 was debated all around the world.

A rapid production of housing for a growing population lay at the bottom of prefab programs in most countries, as did a relatively strong role of the state. In the United States, the most distinctive examples of mass housing were the state-sponsored projects that soon became the homes of the poorest. Many of them were built as repetitive high-rises, including the Pruitt-Igoe Homes in St. Louis (1951–56) and the Robert Taylor Homes in Chicago (1959–62).

But not everywhere were the modular blocks designed for the working class. Under the regime of Mohamad Reza Shah in Iran, legislation was passed in 1964 to encourage private investment in the housing sector. Great housing firms could profit from tax breaks if they built mass housing in towers of ten stories or higher.⁴¹ The ensembles of tower blocks that were subsequently built in Tehran, such as Behjat-Abad (1965–68) or Shahrak-e Ekbatan (1970s) became luxurious residences for the privileged. These buildings had a comparably high material quality and for the Iranian bourgeois classes embodied the lure of modernity and a West-

ern lifestyle. At the same time, a development such as Shahrak-e Ekbatan responded to cultural and climatic specificities: a careful design of the slabs prevented jealous looks from opposite windows, and those parts of an apartment designed for the reception of guests were clearly separated from the private ones.⁴² Windows were predominantly oriented toward the south to reduce sunshine (the sun stands too high to shine into the apartments), and open spaces were laid out as places of encounter for the neighbors. After the Iranian Revolution in 1979, the Islamist regime also encouraged the construction of high-rise projects for lower classes, but since production fell far short of the need apartment blocks remained a luxury item.⁴³

In India, the left-leaning government of prime minister Jawaharlal Nehru promoted state-subsidized mass housing as a means to fight a housing shortage that had afflicted the country's industrial working class since colonial times. In contrast to similar developments in other countries, India's apartment blocks continued to be built in situ using traditional technology—prefabrication offered no cost saving in an environment where labor was cheap and the means of transporta-

tion poorly developed. The wave of state-sponsored housing construction in urban agglomerations such as Delhi, Mumbai, and Kolkata was continued under Nehru's successors in the 1960s and 1970s.

The socialist regime in the People's Republic of China mandated standardized building designs from the 1950s. The industrialization of the construction industry according to Soviet models was started at the same time, but did not advance until the early 1970s, after the Cultural Revolution had come to an end. In the following decades, the government increasingly supported industrialized buildings, which in the 1990s became the country's most conspicuous urban design scheme.

Other Asian countries were much faster in absorbing the new housing types. In Singapore, the Housing and Development Board (HDB) started the large-scale construction of publicly owned housing projects in 1960, only one year after the former British colony's independence. The new policy was combined with an extensive slum clearance project. Between 1960 and 1965, about 118,000 units were built, mostly in standardized high-rise apartments. Forty years later, about 85 percent of the approximately 4.5 million Singaporeans lived

in high-rise apartments that were built by the HDB.⁴⁴

Hong Kong followed a similar pattern, initiating the “largest public housing programme in the non-Communist world.”⁴⁵ The Hong Kong Housing Authority (HA) started the construction of public housing estates for low-income citizens in 1953. One of the first developments was the Shek Kip Mei Estate (1954), built on the site of informal homes that were destroyed in a fire. In the following decades, HA constructed hundreds of thousands of high-rise units, converting the British colony into one of the most densely built up areas on earth.

South Korea in the 1970s invested so heavily in prefab high-rises—called *tanji*—that these buildings became close to the norm of an urban dwelling. Comprising less than 4 percent of the housing stock in 1970, their number rose to 50 percent in 2000, while in the same period the percentage of individual houses decreased from 90 percent to approximately 25 percent.⁴⁶ The largest *tanji* house over 200,000 people. Despite many similarities to Western countries—a state-run program to fight a housing shortage exacerbated by demographic growth and country-to-city migration, large estates of identical buildings, and an ideol-

ogy of modernization—South Korea’s tower blocks developed in a quite different way. They were built in all parts of the major cities rather than on the periphery. They did not cater to society’s most disadvantaged, but mostly to the middle classes. And they were built for owners rather than tenants. Their construction coincided with the period of rapid urbanization. Most *tanji* were thus not built on the site of razed pre-modernist buildings, but on newly developed land, such as on the marshy banks of the Han River in Seoul. Despite the fact that they were originally introduced by the much-hated Japanese colonizers, the *tanji* became a broadly accepted form of housing.⁴⁷ The government authorities forcefully propagated housing blocks as a symbol of modernization and progress and thus established a pattern of perception that is shared by many Koreans to date, despite the fact that the state has been reducing its role in providing housing since the 1980s and the housing situation is worse than, for example, in Singapore.⁴⁸

Many South American countries also experimented with modernist mass housing. In Brazil, mass housing blocks were first built under the conservative-authoritarian regime of Getúlio Vargas

in the late 1930s. The largest construction project to involve mass housing was the new capital city Brasília, which was begun in 1956 under president Juscelino Kubitschek and officially inaugurated in 1960.

Venezuela, which in the mid-twentieth century was one of Latin America's richest countries due to its oil exports, promoted large modernization programs. In Caracas, numerous high-rise developments were built during the 1940s and 1950s, such as the eight-story El Silencio development, extending over seven blocks (1941–45), and the Urbanización Veintitres de Enero (1954–57), both of which were designed by Carlos Raúl Villanueva.⁴⁹

A quite different version of mass housing's egalitarian goals evolved in South Africa during the apartheid era (1948–94), when the government built large estates of cheap one-story pavilions for black workers.⁵⁰ South Africa's state-sponsored townships embody modernism's most rigid potential of ordering the city at the expense of disadvantaged groups. They provided certain minimum standards and at the same time confined their inhabitants to remote locations where they would be strictly separated from the white population. Com-

prehensive planning and ideas about sanitation were thus instrumentalized by a racist regime that violently oppressed the lower classes—in this context the country's black majority.

By 1970 modular housing blocks proliferated around the world. They were built anywhere where sand and cement were available, in the Sahara desert and in the Siberian taiga, in Chicago's inner city and on the shores of the Yellow Sea, outside the Bois de Boulogne and in the Brazilian bush. The modular apartment block was universally accepted as a visible sign of progress and the promise of a better world in a not too distant future. As a unifying force, it defied the dichotomy of the Cold War and an increasing polarization between the rich north and the "underdeveloped" south.

As great as the hopes connected with this type of construction was the disappointment in many countries, where the towers and slabs soon stood out as symbols for modernism's worst nightmare: the exclusion of the poor and their confinement to areas of high crime and violence. Some of the very projects that had come with an unprecedented rhetoric of hope subsequently became the incarnation of social dystopia. In the United States, the

iconic image of mass housing's failure was the demolition of the Pruitt-Igoe Homes in St. Louis (built 1951–56, design: Minoru Yamasaki, 2,800 apartments). The blast in 1972 was transmitted as a media event of national significance and later canonized by the architectural historian Charles Jencks as “the day modern architecture died.”⁵¹ In the two decades that followed, state-sponsored mass housing programs came to an end all around the world. In France and the United States legislation was passed in the year of the oil crisis, 1973. Other capitalist countries followed in the late 1970s. And in Eastern Europe state support waned with the decline of the socialist regimes and was fully withdrawn with their demise. Concomitantly with the retreat of state intervention many countries started to operate the existing developments on the basis of apartment ownership rather than tenancy. Despite these changes, however, modular blocks continued to be built in many countries, seemingly unaffected by dystopian images or harsh debates. In contrast to what progressive architects and politicians had hoped, mass housing turned out to be highly uneven.⁵² The architectural details of the buildings, the social status of the inhabi-

tants, and the public perception differed extremely from country to country, and continued to take very different paths in the respective contexts.