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The Production of Workers' Housing at Salt Lake: Four Generations of Dwelling Form and the Reorganisation of Housing Allocation and Spatial Control

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Abstract: This article examines the industrial town of Salt Lake in Xinjiang, established after 1958, to analyse how four generations of workers' housing organised space and how housing, infrastructure and corporate assets were handled after housing reform. It brings together measured drawings, remote-sensing images and site plans, policy documents, displays of company archives, state-owned enterprise disclosures, notices posted on site and news reports. These sources allow a comparison of built form with property rights, eligibility for rehousing, public services, shareholding and responsibility for land. Across the four generations, the unit of control shifted from beds and rooms towards self-contained dwellings, household-level services and maintenance standards. Reform did not end the work unit's responsibilities at a single moment. Sales of existing housing, rehousing under shantytown redevelopment, registration of individual dwellings, changes to energy supply and the introduction of specialist services occurred at different times, producing disaggregated governance involving several actors.

1. Introduction

Construction of the Xinjiang Salt Lake Chemical Plant began in 1958. To the west of the plant, a residential district acquired single-storey communal dormitories, a corridor-access building for unmarried workers, small self-contained flats and, later, multistorey housing. Today, some early dormitories bear household additions while others stand abandoned; the building for unmarried workers houses project staff; retired workers still occupy the self-contained flats; and some of the later housing can be traded. Within one industrial town, the four generations thus have different patterns of use, ownership and maintenance. How did the spatial controls built into each generation shape its later use? After housing reform, how were housing, facilities, corporate equity and responsibility for land dealt with separately?

Soviet industrial-town planning brought production, transport, housing and communal facilities into a single settlement [1] [2]. In the 1950s, China placed housing in industrial districts under unified planning and investment management [3], while also learning from Soviet construction standards and planning practice [4]. Salt Lake shows the linear industrial layout and work-unit neighbourhood

characteristic of socialist industrial towns. Its housing standards, however, were adjusted to local household composition, climate, materials and construction conditions, rather than copied wholesale from Soviet models. Studies of Chinese urban form and danwei governance explain how this spatial order organised welfare and everyday administration under conditions of scarcity [5] [6]. They have paid less attention to how reform split the same group of buildings into separate matters of property, facilities, services and land. Describing this simply as the 'withdrawal of the work unit' leaves basic questions unanswered: who supplied heat after flats were sold, how were ownership certificates issued for redevelopment housing, and how were the company and land governed after the old plant went bankrupt?

As enterprise reform changed work-unit (danwei) governance and real-estate market reforms advanced, ownership, rehousing eligibility and management responsibilities at Salt Lake were reclassified and settled at successive institutional turning points. This article places measured evidence of Salt Lake's buildings on the same timeline as their disposition after reform. It examines when housing types ceased to fit current standards, uses and responsibilities, and how ongoing governance treated those mismatches selectively.

The argument has two parts. First, the unit of spatial control across the four housing generations moved from the bed and room to the self-contained dwelling, household-level services and maintenance standards. Second, reform divided housing and everyday services formerly coordinated by the danwei into separate responsibilities. Companies, residents, local government and specialist providers took these on at different times. This article terms this process 'disaggregated governance'. It explains how registration of individual dwellings and maintenance of heat supply continued after corporate shareholding changed. It also explains why workers' housing built under the danwei system met different outcomes according to dwelling layout, facilities and eligibility for use.

2. Materials and analytical method

The sources fall into three groups. The first comprises spatial and architectural evidence: remote-sensing images from different periods, a chronology map of the plant and housing, measured surveys of the four housing generations, photographs and interpretation of site plans. The surveys provide comparable records of bay width, depth, access arrangements, kitchens and bathrooms, structure and later additions. The imagery and plans show the relationship between plant and housing, the road network and the expansion of the residential district.

The second group comprises policy and company records. National and autonomous-region documents on housing reform, redevelopment of shantytowns in state-owned industrial and mining areas, and the separation and transfer of 'three supplies and one property-management service' (water, electricity, heating and property management) identify which assets and services policy permitted or required to be handled at each stage. Transcriptions of company archive displays provide evidence of how the company recorded its own history and help establish the sequence of restructuring, housing sales, redevelopment and changes to energy supply. State-owned enterprise offering circulars and legal documents from 2024–2025 are used to check the consolidation scope and shareholding of Salt Lake Salt Production Co., Ltd.

The third group documents assets and current governance. It includes notices posted on site about real-property registration, water-meter records, gas service and heating charges, together with a 2026 news report on care for older people and repairs to facilities in Salt Lake Subdistrict. For each document, the study records the issuing body, date, subject and action. This distinguishes the company's receipt of ownership certificates for an entire project from a resident's transfer registration for an individual dwelling, the provision of services by a specialist company and repairs still undertaken by the enterprise. Personal information in notices posted on site has been blurred.

The analysis proceeds in two stages. First, it compares the units of control in the four housing generations. Beds, rooms and shared facilities organised life in the first two; household dwellings, individual services and centralised utility networks predominated in the third and fourth. Second, it sorts events after reform by six dimensions: ownership, eligibility to reside, service operation, maintenance expenditure, corporate equity and land classification.

3. Planning and construction of the Salt Lake residential district

After 1949, particularly during the First Five-Year Plan, Chinese industrial towns adopted many elements of Soviet planning logic [4]. Salt Lake's early housing therefore shared with Soviet industrial towns an approach to construction and management. In *Sotsgorod*, Miliutin described this approach as an integrated arrangement of railway infrastructure, industry, a protective green belt, housing, public facilities and land for agriculture or recreation [7], pp. 66–71. Transport formed the industrial town's basic framework: routes linked its functional zones in the order required by factory production.

The Salt Lake Chemical Plant and its associated town, built during the Great Leap Forward in 1958, followed this production-first principle. The north–south road carried salt ore from the lake to the processing plant. The east–west road extended outward from a road between the offices and the salt-production branch within the plant. Although administration of Salt Lake Subdistrict has since passed from the plant to local government, these roads remain the principal routes and divide areas with different functions. The map of housing by date shows expansion westward along the main road. By the late 1970s, the outline of the main residential district was largely in place. Construction was neither uniform nor governed by a single plan: economic and political conditions also shaped its pace. Heavy-industry policy prioritised production over living conditions, constraining investment in housing. Nationally, housing accounted for about 9–10% of capital construction investment during the First Five-Year Plan. Its share fell to 4.82% in 1958–1965; investment in 1964 again approached its 1957 level, and housing construction and standards gradually recovered in the early 1970s [4], pp. 109–112. At Salt Lake, housing construction lagged far behind the plant during the first decade and comprised few types. Construction increased substantially after 1970, when housing types began to diverge (Figure 1).

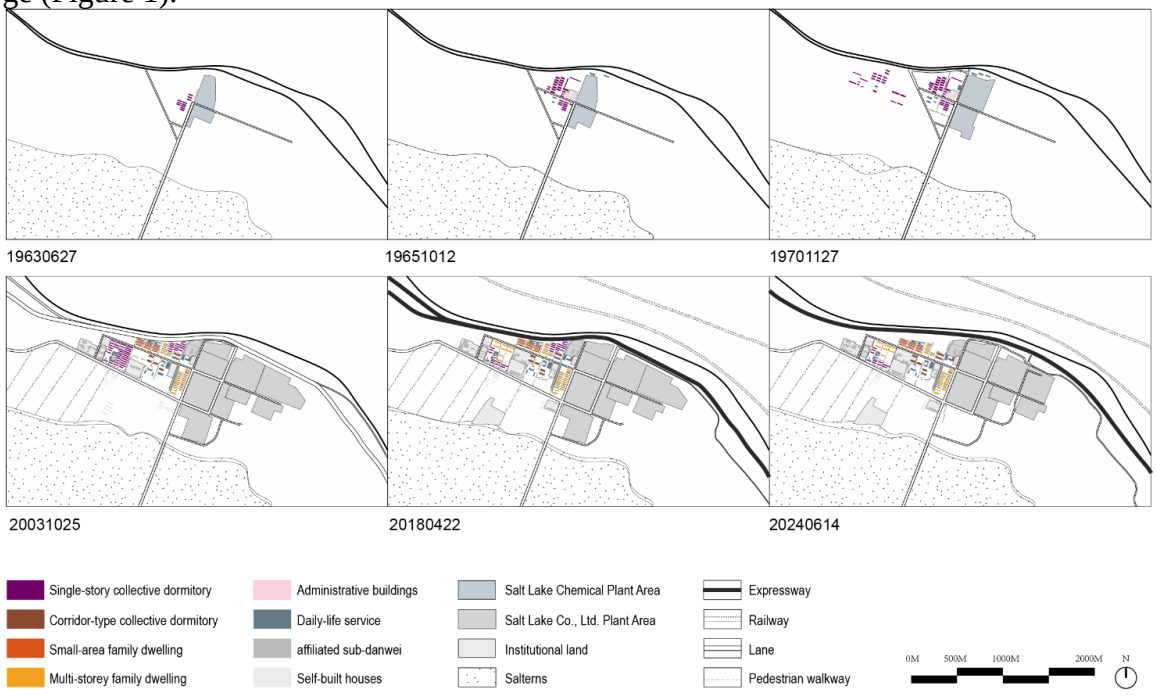

Figure 1. Construction periods of housing in Salt Lake.

Studies of socialist linear industrial layouts, work-unit communities and residential units have examined the integration of production and everyday life [7] [8]. At Salt Lake, the principal effect of Soviet planning was to treat production and residence as parts of one coordinated whole. From the town's earliest construction, housing lay west of the plant, with a canteen, nursery, school, clinic, bathhouse, club and transport stops nearby. No single building could support daily life independently; these facilities had to operate together. This arrangement fitted the danwei system. Shared facilities reduced the time and money needed for the reproduction of labour power and made the Salt Lake Chemical Plant the principal organiser of everyday life, with authority to coordinate land, housing and welfare in its area.

By the mid-1950s, similar relationships and organisational principles drawn from Soviet industrial-town planning were widespread in China. Examples include the work-unit housing of Wuhan Iron and Steel Corporation and the proximity of Shanghai's Caoyang New Village to industrial employment [8] [9]. Salt Lake was not exceptional in this respect. Its housing was nevertheless no direct copy of a Soviet standard design. Salt Lake's particular housing construction and later disposition reveal local differences in policy implementation and building conditions.

4. Housing morphology and standards

The four generations are compared through dwelling layouts, shared facilities, building structure and later alterations.

4.1 First generation: collective living and shared facilities beyond the dwelling

At the plant's outset, rows of single-storey dormitories built of clay brick formed part of communal living. Most people recruited to build the plant were unmarried, so accommodation was divided by sex rather than household. The rooms had neither toilets nor space for cooking. Residents relied on the canteen, bathhouse and communal toilets elsewhere in the district. Each row contained five or seven rooms, with five to six people sleeping in each. A ventilating window and an earthen heated sleeping platform (*kang*) occupied the north side of the room; the stove and heating flue stood centrally; and the south side held personal belongings and served as living space. There was little personal privacy. Coal stores stood at the east and west ends. Each dormitory room measured 6.8 m in width and 6.3 m in depth, with an internal area of 43.6 m ²(Figure 2). The coal-store bays were narrower and their roofs had no designed fall.

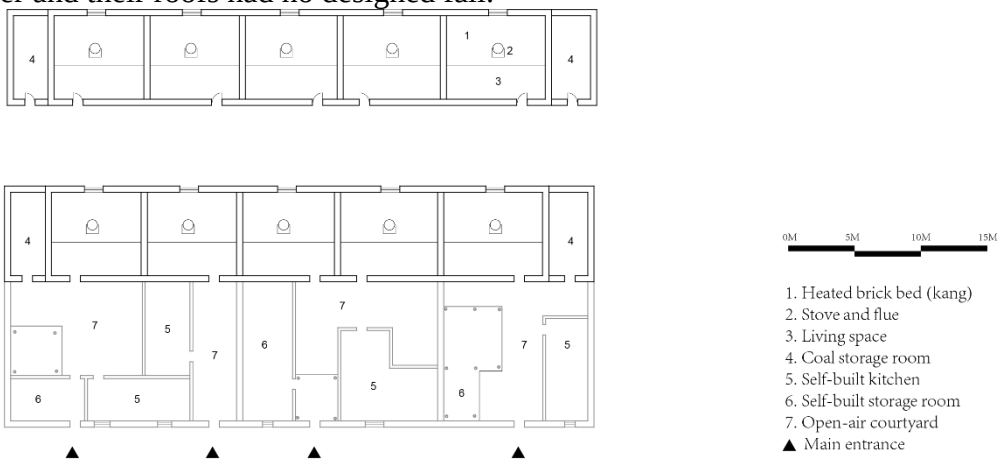

Figure 2. Measured plans of the first-generation communal dormitory and its altered present condition.



Figure 3. Site plan of the first-generation residential area.



Figure 4. Aerial view of the housing.



Figure 5. South courtyard-wall elevation of the housing.



Figure 6. Ruins of the main residential building.



Figure 7. East elevation of the housing.

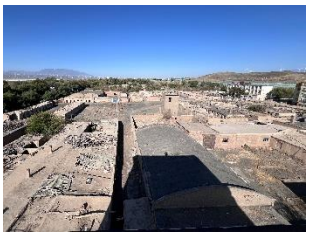

Figure 8. Public facilities in the residential area.



Figure 9. Interior of the southern addition.

The buildings had load-bearing walls of fired clay brick and roofs supported on timber beams. Timber rafters or branches formed a base for a thick insulating earth layer shaped to drain. Mud-plaster finishes, earthen blocks and later brick repairs survive in places. The roof comprised main timber beams, slender rafters, battens or branches, the insulating and sloped earth layer, and a mud-plaster or later cement finish. There were no reinforced-concrete columns or beams, nor a continuous ring beam. Door and window openings generally had timber lintels; steel doors and metal window grilles were later replacements. Doors opened to the south and windows to the north. Individual heating stoves and flues were placed north of the roof ridge.

Retired workers' recollections indicate that ideas of family-based accommodation returned after the People's Commune movement ended. Construction of the third housing generation eased the shortage, and some workers moved from the old rows into new dwellings. The earlier accommodation was then changed from shared sleeping space for several people into housing for individual families. Residents added kitchens and storage spaces to the south of the main rooms. Rammed-earth walls enclosed and subdivided formerly shared spaces between buildings, forming private household courtyards. These additions were agreed among neighbours. Courtyard areas differed from household to household and the plans were irregular; Figure 2 records only one surviving arrangement. Fieldwork also found courtyard bays shared by two families and spaces divided again at a later date (Figures 3–9). The additions show that residents did not merely accept the original type. By bringing cooking, storage and household boundaries into the courtyard, they changed the division between the dwelling and communal facilities established by the work unit. The first generation's physical history therefore has two stages: the work unit or company provided basic accommodation, and residents gradually adapted it for family use.

4.2 Second generation: collective accommodation organised by rooms and beds

In the late 1970s, the Salt Lake Chemical Plant built a three-storey corridor-access dormitory for unmarried workers. The building is approximately 47 m long and 12.8 m wide (Figure 10). A central

stair connects a corridor with rooms on both sides; each floor contains 18 rooms of approximately 21.5 m ²; generally occupied by three people. The rooms lack individual kitchens and bathing space. Shared toilets, a laundry and a meeting room occupy the middle of the building. Residents still depended on the separate bathhouse and canteen.

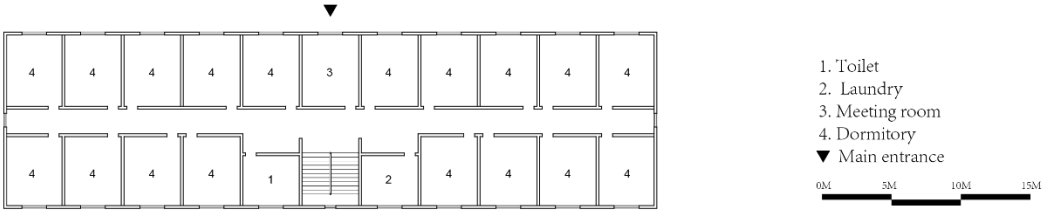

Figure 10. Measured plan of the second-generation communal dormitory.

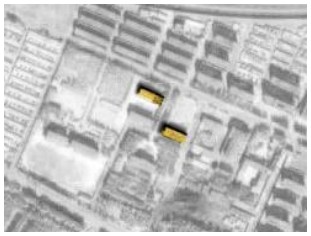

Figure 11. Surroundings of the surviving building for unmarried workers.



Figure 12. Entrance elevation of the building for unmarried workers.



Figure 13. Interior corridor of the building for unmarried workers.



Figure 14. Kitchen installed as a temporary alteration.

Continuous brick walls, piers between windows and concrete bands at floor level indicate a load-bearing brick structure strengthened with reinforced-concrete floors and ring beams; the central stair and ends have some additional concrete elements. Compared with the first generation's single-storey clay-brick dormitories, construction technology and structural provision improved, but floor area per person fell and occupancy density rose. Corridors, repeated rooms and allocated beds organised collective living. Fieldwork in 2025 found that Salt Lake Salt Production Co., Ltd. had let the building to a contractor on a wind-power project for staff accommodation and administration. Temporary kitchens, equipment and stored goods now occupy some rooms (Figures 11–14). Repeated rooms still accommodate lodging and offices, but they are difficult to adapt for the independent kitchens and bathrooms expected in contemporary family housing. The reuse reflects both the layout's capacity for adaptation and the parts that resist alteration.

4.3 Third generation: family life within self-contained flats

The third generation consists of nine buildings, each with four stairwells and three flats per stairwell on each of three floors. Field measurements give usable floor areas, including balconies, of approximately 42.8 m ²for the two side flats and 32.9 m ²for the middle flat (Figure 15). Repeated brick walls, concrete floor slabs and compact stairwells form the buildings; separate coal stores and narrow roads between them create regular rows (Figures 16–19). Each end has a largely unbroken gable wall, while repeated structural and stair units organise the interior. The size and repetition of the window openings, floor heights, continuous walls and absence of prominent columns and beams on the elevations indicate load-bearing brick masonry with reinforced-concrete floor slabs. The windows are narrow and regularly spaced, the wall area relatively large, and the stairwell closely integrated with the walls. Flat doors open directly onto the stair landing. Unlike the dormitories, each flat has a kitchen, bathroom and separate entrance. Daily household activities moved from communal

canteens and bathhouses into the flat.

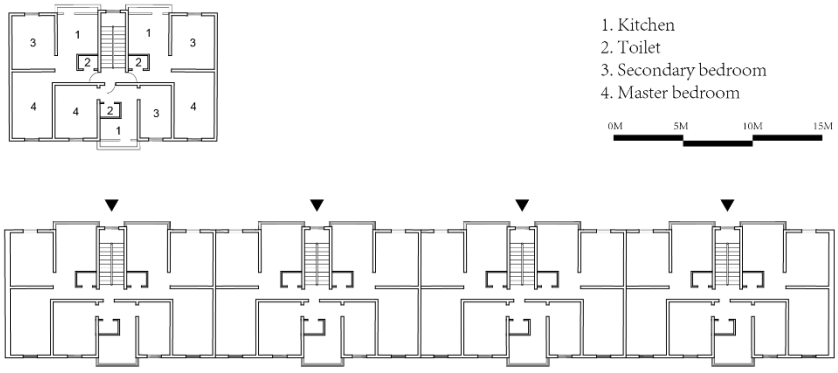

Figure 15. Measured plan of the third-generation small family flats.



Figure 16. Site plan of the third-generation residential area.



Figure 17. South elevation of the housing and its coal stores.



Figure 18. One stairwell serving three flats per floor.



Figure 19. Footpath between the housing and coal stores.

Flats of different sizes were provided within the same stairwell, with allocations based on length of service and professional rank. Balconies altered the rhythm of the elevations while adding a buffer between inside and outside and space for storage. The separate coal stores show that these self-contained flats still depended on fuel storage and services shared by the group of buildings. As the first Salt Lake workers' housing with a kitchen and bathroom inside each flat, this generation no longer relied on the communal bathhouse or work-unit canteen for those functions. Shared stairs, coal stores, a public activity centre and roads nevertheless kept everyday life partly collective.

4.4 Fourth generation: larger flats and updated infrastructure

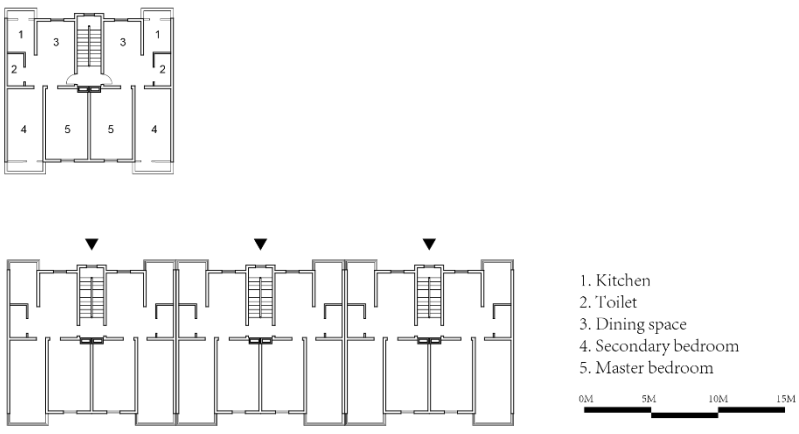

Figure 20. Measured plan of the fourth-generation multistorey housing.

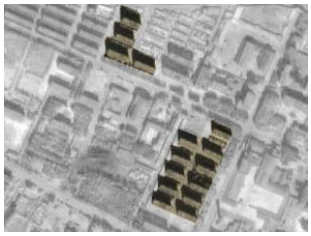

Figure 21. Site plan of the fourth-generation residential area.



Figure 22. South elevation of the housing.



Figure 23. One stairwell serving two flats per floor.



Figure 24. Footpath between the housing and coal stores.

Fourth-generation multistorey housing gradually replaced some of the single-storey courtyard dwellings. Each building usually has three stairwells, with two flats per stairwell on each floor. The measured area of one flat, including its balcony, is approximately 60.4 m ²(Figure 20). Compared with the third generation, brick walls more often serve as partitions and enclosure. Load-bearing walls and floor slabs incorporate substantially more reinforced concrete, supplemented by ring beams, reinforced-concrete confining columns and concrete stairs. These structural changes allowed wider bays, a higher window-to-wall ratio and a clearer separation of functions within each flat. Construction phases differ in their building envelopes and heating: earlier buildings retain open balconies and traces of individual coal heating, while later ones have enclosed sunrooms and central boiler heating. Enclosed balconies buffer cold and windblown sand and are also used for storage, drying clothes and extending rooms.

Replacement doors and windows, security grilles, external electrical cables, gas pipes and air-conditioning units show that households increasingly alter the spaces within and around their flats. At the same time, uniform repainting, surfaced roads, building signs and improvements to shared areas bring the outward appearance under community management (Figures 21–24). Two opposing interventions are thus visible on the buildings: residents modify the envelope separately, while managers periodically restore a uniform public appearance. Load-bearing structures, stairs and utility networks did not become separate household assets when ownership changed. The housing retains the spatial interdependence created by collective construction.

4.5 Housing design compared with relevant policies and standards

Table 1. Parameters of four generations of Salt Lake workers' housing compared with relevant standards.

Item	First-generation housing	Second-generation housing	Third-generation housing	Fourth-generation housing
Construction period	1958–1976	1976–1982	1982–1988	1995–2013
Construction phases	4	1	1	3
Dwelling characteristics	Communal dormitory for unmarried workers; not divided into households; no private space.	Communal dormitory for unmarried workers; shared toilets and laundry within the building.	Self-contained flats; very small toilets; some flats without balconies.	Self-contained flats; every flat has a balcony, later enclosed.
Access arrangement	External access	Single corridor with rooms on both sides	Three flats per floor served by one stairwell	Two flats per floor served by one stairwell
Peak historical number of buildings	45	6	9	23
Number of storeys	1	3	3	5
Flats/rooms per floor	5 or 7	18	3	2
Design occupancy per unit	8	3	4	3

Average area per unit	65.8 m ²	21.5 m ²	47.0 m ²	69.2 m ²
Area per person	8.23 m ²	7.17 m ²	11.8 m ²	23.1 m ²
Corresponding standard	*Several Opinions on Revising the Building Standards for Workers' Housing and Dormitories*	*Several Opinions on Floor-Area Standards for Housing and Dormitories in Factories and Mines*	*Supplementary Provisions on Design Standards for Workers' Housing*	*Provisions on Strict Control of Urban Housing Standards*
Year of corresponding standard	1973	1977	1981	1983
Issuing authority	State Capital Construction Commission	State Construction Commission	State Construction Commission	State Council
Area requirements of standard	Average living area per household: 18–21 m ², average gross floor area per household: 34–37 m ², or 36–39 m ²in severe-cold regions.	Multistorey housing at new factories and mines: average per household 34–36 m ²in ordinary regions and 36–40 m ²in severe-cold regions. New housing at existing factories and mines: 39–42 m ²in ordinary regions and 45 m ² in severe-cold regions. Average for all housing at a factory or mine: no more than 40 m ²in ordinary regions or 42 m ²in severe-cold regions.	Gross floor area per household: Category I, 42–45 m ², II, 45–50 m ², III, 60–70 m ², IV, 80–90 m ². An additional 6 m ²per household is permitted in high-rise housing requiring lifts.	Gross floor area per household: Category I, 42–45 m ², II, 45–50 m ², III, 60–70 m ², IV, 80–90 m ². Categories I and II were to predominate nationally.
Storey-height and functional requirements	Aim to provide each family with its own dwelling, kitchen and toilet.	Storey height 2.8 m, not exceeding 3 m; build mostly four- or five-storey housing.	Storey height generally 2.8 m; housing organised as self-contained units, each with its own kitchen and toilet and each household with its own electricity and water meters.	—
Later alterations	Courtyards adapted for family use.	Temporary kitchens inside rooms; liquefied-gas stoves added; accommodation, equipment and goods stored in the rooms.	Conversion to collective heating; open balconies enclosed; external natural-gas pipes installed.	Conversion to collective heating; external natural-gas pipes installed; optical-fibre connections installed.
Current condition	Abandoned and partly demolished.	Let by Salt Lake Salt Production Co., Ltd. to a wind-power project contractor and converted into offices and dormitories.	Occupied by retired workers and managed by Salt Lake Community.	Occupied by retired workers; some flats sold by their original owners. Ownership certificates are held, and the flats can be traded.

Table 1 shows that the long-term direction of standardisation in Salt Lake housing was towards self-contained family dwellings, rather than the systematic removal of domestic space. In this respect it differed from the Soviet model that sought to displace the private sphere through collective living. The shared kitchens, toilets and bathhouses of the first two generations of dormitories, and the restriction of private space within them, were more closely tied to acute housing shortages during the Great Leap Forward and the Cultural Revolution. By the mid-to-late 1970s, after the Cultural Revolution, communal facilities that had curtailed or temporarily replaced household functions did not extinguish domestic boundaries. Residents gradually gained room to expand family space, as seen in the conversion of first-generation dormitories and the construction of third-generation housing designed around family life. The work-unit system still existed on the eve of reform and opening up.

National policies and standards help identify the institutional conditions behind these changes in housing form.

Table 2. Historical changes in the objects regulated by Chinese housing standards and their local adaptation.

Object of regulation	**1950s**	**1966-1983**	**1986-2005**	**2011-2025**
Spatial standards	Industrial areas, housing, welfare facilities and service networks were planned together; standard units, modules and components were used to replicate housing.	Regulation shifted from living area per person towards gross floor area per dwelling, self-contained units and differentiated provision.	Housing standards developed into a distinct system, with systematic requirements for dwelling layouts, kitchens and bathrooms, modular dimensions and equipment.	Housing, sites, engineering infrastructure and public services were regulated at the scale of neighbourhood service areas and whole projects.
Room standards	Ratios of households to rooms, room size, and the arrangement of kitchens and toilets were regulated; suitability depended on local surveys.	Independent kitchens and toilets, storey height and metered services gradually entered policy targets.	Room area, storey height, daylight, ventilation, kitchens, bathrooms and equipment became provisions that could be checked in design review.	Bedrooms, kitchens, bathrooms, circulation space and clear height were assigned explicit minimum dimensions.
Density standards	Density was regulated indirectly through master plans, construction phases, number of storeys and investment, without a mature set of uniform numerical standards.	Gross floor area per dwelling, number of storeys and average values for industrial and mining areas were used to adjust development intensity, with separate figures for severe-cold regions.	Land use, floor-area ratio, site coverage ratio, green space, sunlight, roads and supporting facilities were regulated in combination.	Floor-area ratio, site coverage ratio, green-space ratio, height and land area per person were regulated in relation to climate zone, building height and neighbourhood service area.
Quality assessment criteria	Within cost limits, buildings were expected to be sound, usable, insulated against noise and extremes of temperature, and to provide basic sanitation.	Area, cost, the proportion of self-contained dwellings and basic sanitary conditions were used together to assess housing provision.	Assessment expanded from safety and sanitation to technical and economic evaluation, energy efficiency and overall performance.	Durability, waterproofing, thermal and acoustic insulation, energy efficiency, accessibility and maintenance formed minimum requirements across the building life cycle.
Principal regulatory mechanisms	Administrative planning, investment quotas, standard drawings, unified construction and allocation.	Policy targets, investment control, classification of industrial and mining areas, and climate-based adjustments.	Code provisions, standard drawings, construction drawing review and planning permission.	Mandatory codes, drawing review, completion inspection and requirements for operation and maintenance.

Note: The periodisation summarises changes in the objects of regulation; it does not imply four discrete institutional periods. Sources include State Council decisions, the China Architectural Yearbook, and the successive housing construction targets and standards for dwellings, residential areas and dormitories assembled in the source materials.

Table 2 traces a change in what Chinese housing standards regulated. In the 1950s, investment quotas, standard drawings, modules and components chiefly constrained construction. From the 1960s to the early 1980s, living area per person, gross floor area per dwelling, cost, number of storeys and the proportion of self-contained dwellings were used to regulate supply. After 1986, unit layout, rooms, kitchens and bathrooms, storey height and performance increasingly became technical provisions subject to design review and inspection. After 1993, regulation extended to land use, density, green space, sunlight and public services across the residential area. Current standards also address safety, durability, energy efficiency, accessibility for older residents, and operation and maintenance.

Standards also depended on regional practice. In 1956 the State Council assigned responsibilities for the planning, design, investment, construction, allocation and management of new industrial areas to government departments and local authorities. The state organised standard housing designs, which were then prepared by region [3], pp. 12-15. From 1957, provinces and municipalities began preparing standard designs for housing and dormitories in response to local conditions. Between 1959 and 1964, marked differences in climate, construction conditions and materials led provinces, municipalities and autonomous regions to take greater responsibility for standard civil-building designs. Modules, components, costs and basic functional requirements were thus gradually translated into locally buildable schemes [10], pp. 348-350.

Read against Table 1, these standards help explain the four generations. Investment quotas constrained the cost of the first-generation dormitories, and locally sourced clay brick helped reserve funds for industrial buildings. After the 1973 Opinions on Revising the Building Standards for Workers' Housing and Dormitories, regulation shifted from investment quotas towards area per dwelling and the proportion of self-contained units. Informal conversion of dormitories into family courtyards was consequently tolerated, while single workers moved into second-generation dormitories with indoor toilets. As housing standards developed into a distinct code, room area and kitchen and bathroom equipment became reviewable requirements; density and sunlight were also regulated. The gross floor area of third-generation dwellings met the applicable limits. Housing was subsequently altered with enclosed sunrooms and central heating to comply with the Provisions on Strictly Controlling Urban Housing Standards. Table 1 also provides a basis for the increasing spacing between successive groups of fourth-generation buildings. Across the four generations, the unit of spatial control shifted from beds and rooms to self-contained dwellings, and then towards infrastructure and maintenance performance. These physical changes gave spatial form to successive objects of regulation.

National and regional standards set limits for area, building components and basic functions, and thus shaped the initial space. They could not, on their own, determine allocation, occupation, title or maintenance. The subsequent use of each dwelling also depended on how ownership, services and maintenance responsibilities were handled after reform.

5. Asset disposition, rights and disaggregated governance

Housing reform, redevelopment and the transfer of public services followed different timetables at Salt Lake. Their effects on ownership, use and maintenance are examined in turn.

5.1 Asset disposition and the reorganisation of authority through housing reform and shantytown redevelopment

The four generations had different sources of title, applicable rules and conditions of occupancy. Housing disposition at Salt Lake therefore followed two paths, each concerning different dwellings and periods. The first was the sale of existing work-unit housing under the housing reform programme. The 1998 reform called for an end to the in-kind allocation of welfare housing and promoted the sale of existing public housing and the monetisation of housing provision [11] [12]. A display of company archival material records that dwellings at Salt Lake and Dawan in Urumqi were sold to employees under the reform policy in 2005. At Salt Lake, third- and fourth-generation dwellings had complete kitchens and bathrooms and could support independent family life. From 2005, Salt Lake Salt Production Co., Ltd. sold these dwellings, in its capacity as a work unit, to employees whose work-unit status had entitled them to allocated housing. Interviewees reported that the prices were far below those of commercial dwellings of comparable size at the time. The purchasers already lived in these buildings; what changed through the reform sale and purchase was ownership. Governance authority

also shifted from unified management by the work-unit factory towards household registration administration by local government and the community.

The second path concerned dwellings built under the shantytown redevelopment programme. Their project-level certificates and transfers of title to individual households continued after construction. The company display records the completion of 100, 90 and 30 dwellings in 2012, 2013 and 2015 respectively, a total of 220 units built under the programme for state-owned industrial and mining areas. They were confined to seven buildings in the last group of fourth-generation housing at Salt Lake. The latest of these buildings was completed in October 2013. The project was intended to move employees still living in first-generation housing into new buildings that met current housing standards. In that sense, the redevelopment programme determined the abandonment and demolition of the first-generation dwellings.

Xinjiang's 2010 shantytown redevelopment policy treated existing property rights, eligibility based on housing need, and resettlement arrangements as separate matters. It stipulated that employees facing housing hardship, and their surviving dependants, who rented work-unit public housing in state-owned industrial and mining shantytowns and had not benefited from housing reform should, in principle, be rehoused through employee-funded housing construction or housing provided for unsafe accommodation and hardship. Companies prepared the plans and governments approved their implementation; separate policies governed confirmation of title to the replacement dwellings and their subsequent sale [13]. On 26 September 2024, Salt Lake Salt Production Co., Ltd. notified residents that it had obtained land certificates and real-property title certificates for seven residential buildings in the Salt Lake redevelopment project. Residents were then asked to submit identification, purchase agreements, proof of marital status and payment receipts to complete the transfer of title. Notices dated 22 December 2024 and 21 February 2025 again requested purchase agreements, household registration books and marital-status documents (source: notices posted at the Salt Lake redevelopment site on those three dates). These procedures show that the 2005 housing reform had not privatised the whole estate at once, nor had the sale of dwellings ended all company housing responsibilities. For households outside the earlier reform, the company still verified eligibility, prepared plans, raised funds and built housing; government retained authority over project approval, land and eligibility for subsidised housing.

The notices and interviews with people relocated through the redevelopment programme indicate that, before relocation, the large proportion of self-built floor area in first-generation housing made it difficult to meet current requirements for title registration, infrastructure and use. The employees and family members living there had therefore been unable to obtain property certificates. Under the prevailing registration rules, their residential space lacked formal legal recognition. After housing reform, these residents could no longer move into better and newer dwellings as their length of service and professional rank increased, as they might have done under the work-unit system, because those dwellings had already been privatised. Asset disposition thus reclassified both housing and residents. Different projects brought different rules for resettlement eligibility, contributions and later title. Some employees acquired private property through housing reform, while others remained in what was still called work-unit public housing, although it had lost its former institutional legitimacy. Their position illustrates a gap between legal effect and the application of law.

Institutional change can therefore alter the conditions under which buildings are used and the order in which they are dealt with. Under the definition of a state of exception [14], the shantytown redevelopment policy addressed an exception left unresolved during the institutional transition. This condition was brief; once redevelopment was completed, the exception ended.

5.2 The separation of public-service responsibilities and disaggregated governance

Changing title to work-unit housing did not divide staircases, exterior walls, roads or service networks into separate assets. Nor did water, electricity, heating or property management become individual services automatically when households received title certificates; these elements still required collective maintenance. The 2016 policy on the separation and transfer of the three supplies and one property-management service (water, electricity, heating and property management) in state-owned enterprises' employee housing areas required the relevant facilities to be inventoried and valued, transfer agreements signed, title formalities completed, and management transferred to specialist providers [15]. A change in service provider therefore also entailed decisions about facility assets, operating standards, renovation costs and routine charges.

At Salt Lake, these transfers proceeded on different timetables. The company display records a district heating upgrade completed in 2013 and the shutdown of two company-owned generating units in 2016, after which electricity in the Salt Lake area was supplied by the State Grid. Posted notices show that Urumqi Dabancheng Jiade Boyuan Gas Co., Ltd. provided gas safety services in 2024. The logistics management centre of Salt Lake Salt Production Co., Ltd. still organised the payment of heating charges directly in 2025. In 2026, Urumqi Bofeng Hengda Water Operations Management Co., Ltd. registered water-meter details for the eight new residential buildings. Electricity, gas, water and heating thus came under different organisations.

A 2026 news report offers further evidence of day-to-day governance. About 320 older residents, most of them retired employees, lived permanently in Salt Lake Subdistrict. The subdistrict and community provided elder care and routine services, while employees of the salt production company still visited homes to repair water-supply and heating facilities [16]. Local government, the community, the company and specialist service providers therefore handled different matters within the same residential area. The company had not withdrawn entirely, and the community had not taken over all company assets. Services once bundled within the work unit were divided among energy supply, equipment maintenance, fee collection and resident services. Disaggregated governance replaced administration by a single organisation.

6. Conclusion

Four generations of worker housing at Salt Lake record a change in the unit of spatial control. The first two organised collective life around beds, rooms and shared facilities. The third and fourth brought kitchens, bathrooms and domestic boundaries into self-contained dwellings, which were gradually connected to central heating, gas and individually metered services. National and regional standards set limits for area, components, unit layouts and performance; work-unit allocation, local construction and residents' own alterations determined how those limits took effect. Salt Lake's housing history is thus more than a technical history of increasing floor area. It also charts the movement of daily functions from collective facilities into the home, and of regulation from people and beds towards housing and infrastructure.

Asset disposition after reform was likewise spread across several stages. The available material establishes that the sale of existing dwellings, the assessment of eligibility for shantytown redevelopment, project construction, registration of individual titles, the payment of heating charges, changes in electricity supply, and the arrival of specialist water and gas services occurred at different times. Each dealt with a different question of ownership, occupancy, service operation or maintenance. At Salt Lake, the company, residents, local government and specialist providers consequently coexist within a pattern of disaggregated governance. Company responsibilities narrowed and changed but did not disappear. Nor did the arrival of local government, the community and specialist providers create a single body to replace the company. The evidence available at present establishes the

coexistence of several forms of disposition.

This reorganisation of responsibility, together with building form, shaped the later use of the four housing generations. Dwellings without their own kitchens and bathrooms, and still heavily dependent on older collective facilities, were harder to retain as family housing and were briefly treated as exceptions. Repeated rooms remained adaptable to temporary accommodation or offices; self-contained dwellings were more readily connected to individual services and title registration. During institutional change, exceptionalisation arose where older housing no longer fitted new rules for ownership, infrastructure and supervision. Continuing governance then led to its selective retention, reuse or vacancy.

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