

THE CITY IN HISTORY Its Origins, Its Transformations, and Its Prospects by LEWIS MUMFORD HARCOURT, BRACE & WORLD, INC. • NEW YORK

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5: FACTORY, RAILROAD, AND SLUM

The main elements in the new urban complex were the factory, the railroad, and the slum. By themselves they constituted the industrial town: a word that described merely the fact that more than two thousand people were gathered in an area that could be designated with a proper name. Such urban clots could and did expand a hundred times without acquiring more than a shadow of the institutions that characterize a city in the mature sociological sense—that is, a place in which the social heritage is concentrated, and in which the possibilities of continuous social intercourse and interaction raise to a higher potential all the complex activities of men. Except in shrunken, residual forms, even the characteristic organs of the stone age city were lacking.

The factory became the nucleus of the new urban organism. Every other detail of life was subordinate to it. Even the utilities, such as the water supply, and the minimum of governmental offices that were necessary to a town's existence often, if they had not been built by an earlier generation, entered belatedly: an afterthought. It was not merely art and religion that were treated by the utilitarian as mere embellishments: intelligent political

administration long remained in the same category. In the first scramble of exploitation, no provisions would be made for police and fire protection, water and food inspection, hospital care, or education.

The factory usually claimed the best sites: mainly, in the cotton industry, the chemical industries, and the iron industries, the sites near a waterfront; for large quantities of water were needed now in the processes of production, supplying the steam boilers, cooling hot surfaces, making the necessary chemical solutions and dyes. Above all, the river or canal had still another important function: it was the cheapest and most convenient dumping ground for all soluble or suspendable forms of waste. The transformation of the rivers into open sewers was a characteristic feat of the new economy. Result: poisoning of the aquatic life: destruction of food: befouling of water so it was unfit to bathe in.

For generations, the members of every 'progressive' urban community were forced to pay for the sordid convenience of the manufacturer, who often, it happened, consigned his precious by-products to the river, for lack of scientific knowledge or the empirical skill to use them. If the river was a liquid dump, great mounds of ashes, slag, rubbish, rusty iron, and even garbage blocked the horizon with their vision of misplaced and unusable matter. The rapidity of production was in part matched by the rapidity of consumption, and before a conservative policy of scrap metal utilization became profitable, the formless or deteriorated end-products were cast back over the surface of the landscape. In the Black Country of England, indeed, the huge slag heaps still look like geological formations: they decreased the available living space, cast a shadow on the land, and until recently presented an insoluble problem of either utilization or removal.

The testimony that substantiates this picture is voluminous; indeed, it is still open for inspection in the older industrial cities of the Western World, despite herculean efforts to cleanse the environment. Let me however quote from an early observer, Hugh Miller, the author of 'Old Red Sandstone': a man thoroughly in harmony with his age, but not insensitive to the actual qualities of the new environment. He is speaking of Manchester in 1862.

"Nothing seems more characteristic of the great manufacturing city, though disagreeably so, than the river Irwell, which runs through the place. . . . The hapless river—a pretty enough stream a few miles up, with trees overhanging its banks and fringes of green sedge set thick along its edges—loses caste as it gets among the mills and print works. There are myriads of dirty things given it to wash, and whole wagonloads of poisons from dye houses and bleachyards thrown into it to carry away; steam boilers discharge into it their seething contents, and drains and sewers their fetid impurities; till at length it rolls on—here between tall dingy walls, there

under precipices of red sand-stone—considerably less a river than a flood of liquid manure.”

Note the environmental effect of the *massing* of industries that the new regime tended to make universal. A single factory chimney, a single blast furnace, a single dye works may easily have its effluvia absorbed by the surrounding landscape: twenty of them in a narrow area effectively pollute the air or water beyond remedy. So that the unavoidably dirty industries became through urban concentration far more formidable than they were when they had existed on a smaller scale and were more widely dispersed about the countryside. At the same time clean industries, such as the making of blankets, which still goes on at Witney, in England, with bleaching and shrinking conducted out in the open air of a charming countryside, became impossible under the old rural methods in the new centers. There chlorine took the place of sunlight, and for the healthful outdoor work that often accompanied the older processes of manufacture, with changes of scene as well as process to renew the spirit of the worker, came the dull drudgery of work within a dirty building hemmed in by other dirty buildings. Such losses cannot be measured in merely pecuniary terms. We have no calculus for figuring how much the gains in production were offset by the brutal sacrifice of life and a living environment.

While factories were usually set near the rivers, or the railroad lines that paralleled the rivers (except where a level terrain invited diffusion), no authority was exercised to concentrate factories in a particular area, to segregate the more noxious or noisy industries that should be placed far from human habitations, or to insulate for domestic purposes the appropriate adjacent areas. ‘Free competition’ alone determined location, without thought of the possibility of functional planning: and the jumbling together of industrial, commercial, and domestic functions went on steadily in industrial cities.

In areas with a rough topography, such as the valleys of the Allegheny plateau, a certain amount of natural zoning might take place, since only the river bottoms would afford enough space for a big mill to spread—though this disposition ensured that the maximum amount of noxious effluvia would rise and spread over the homes on the hillsides above. Otherwise living quarters were often placed within the leftover spaces between the factories and sheds and the railroad yards. To pay attention to such matters as dirt, noise, vibration, was accounted an effeminate delicacy. Workers’ houses, often those of the middle classes, too, would be built smack up against a steel works, a dye plant, a gas works, or a railroad cutting. They would be built, often enough, on land filled in with ashes and broken glass and rubbish, where even the grass could not take root; they might be on the edge of a dump or a vast permanent pile of coal and slag: day in and day out the stench of the refuse, the murky outpouring of chim-

neys, the noise of hammering or of whirring machinery, accompanied the household routine.

In this new scheme, the town itself consisted of the shattered fragments of land, with odd shapes and inconsequential streets and avenues, left over between the factories, the railroads, the freight yards and dump heaps. In lieu of any kind of over-all municipal regulation or planning, the railroad itself was called upon to define the character and project the limits of the town. Except in certain parts of Europe where old-fashioned bureaucratic regulations happily kept the railroad stations at the outskirts of the historic city, the railroad was permitted, or rather, was invited to plunge into the very heart of the town and to create in the most precious central portions of the city a waste of freight yards and marshalling yards, economically justifiable only in the open country. These yards severed the town’s natural arteries and created an impassable barrier between large urban segments: sometimes, as in Philadelphia, a veritable Chinese wall.

Thus the railroad carried into the heart of the city not merely noise and soot but the industrial plants and the debased housing that alone could thrive in the environment it produced. Only the hypnotism of a new invention, in an age uncritically enamored of new inventions, could have prompted this wanton immolation under the wheels of the puffing Juggernaut. Every mistake in urban design that could be made was made by the new railroad engineers, for whom the movement of trains was more important than the human objects achieved by that movement. The wastage of space by railroad yards in the heart of the city only furthered its more rapid extension outward; and this in turn, since it produced more railroad traffic, gave the extra sanction of profits to the misdemeanors so committed.

So widespread was this deterioration of environment, so hardened have people in big cities become to it in the course of a century, that even the richer classes, who could presumably afford the best, to this day often indifferently embrace the worst. As for housing itself, the alternatives were simple. In the industrial towns that grew up on older foundations, the workers were first accommodated by turning old one-family houses into rent barracks. In these made-over houses, each separate room would now enclose a whole family: from Dublin and Glasgow to Bombay, the standard of one room per family long held. Bed overcrowding, with three to eight people of different ages sleeping on the same pallet, often aggravated room overcrowding in such human sties. By the beginning of the nineteenth century, according to a Dr. Willan, who wrote a book on the diseases of London, it had produced an incredible state of physical defilement among the poor. The other type of dwelling offered to the working class was, essentially, a standardization of these degraded conditions; but it had this further defect. that the plans of the new houses and the ma-

terials of construction usually had none of the original decency of the older burgher houses: they were meanly built from the ground up.

In both the old and the new quarters a pitch of foulness and filth was reached that the lowest serf's cottage scarcely achieved in medieval Europe. It is almost impossible to enumerate objectively the bare details of this housing without being suspected of perverse exaggeration. But those who speak glibly of urban improvements during this period, or of the alleged rise in the standards of living, fight shy of the actual facts: they generously impute to the town as a whole benefits which only the more favored middle-class minority enjoyed; and they read into the original conditions those improvements which three generations of active legislation and massive sanitary engineering have finally brought about.

In England, to begin with, thousands of the new workers' dwellings, in towns like Birmingham and Bradford, were built back to back. (Many still exist.) Two rooms out of four on each floor therefore had no direct daylight or ventilation. There were no open spaces except the bare passages between these doubled rows. While in the sixteenth century it was an offense in many English towns to throw rubbish into the streets, in these early industrial towns this was the regular method of disposal. The rubbish remained there, no matter how vile and filthy, "until the accumulation induced someone to carry it away for manure." Of this there was naturally no lack in the crowded new quarters of the town. The privies, foul beyond description, were usually in the cellars; it was a common practice to have pigsties under the houses, too, and the pigs roamed the streets once more, as they had not done for centuries in the larger towns. There was even a dire lack of toilets: the 'Report on the State of Large Towns and Populous Districts' (1845) states that "in one part of Manchester in 1843-44 the wants of upward 700 inhabitants were supplied by 33 necessities only—that is, one toilet to every 212 people."

Even at such a low level of design, even with such foul accompaniments, not enough houses were built in many cities; and then far worse conditions prevailed. Cellars were used as dwelling places. In Liverpool, one-sixth of the population lived in "underground cellars," and most of the other port cities were not far behind: London and New York were close rivals to Liverpool: even in the nineteen-thirties, there were 20,000 basement dwellings in London medically marked as unfit for human occupation. This dirt and congestion, bad in themselves, brought other pests: the rats that carried bubonic plague, the bedbugs that infested the beds and tormented sleep, the lice that spread typhus, the flies that visited impartially the cellar privy and the infant's food. Moreover the combination of dark rooms and dank walls formed an almost ideal breeding medium for bacteria, especially since the overcrowded rooms afforded the maximum possibilities of transmission through breath and touch.

If the absence of plumbing and municipal sanitation created frightful stench in these new urban quarters, and if the spread of exposed excrement, together with seepage into local wells, meant a corresponding spread of typhoid, the lack of water was even more sinister. It removed the very possibility of domestic cleanliness or personal hygiene. In the big capital cities, where some of the old municipal traditions still lingered, no adequate provision for water was made in many new areas. In 1809 when London's population was about a million, water was available over the greater part of the city only in the basements of houses. In some quarters, water could be turned on for only three days in a week. And though iron pipes made their appearance in 1746, they were not extensively used until a special act in England in 1817 required that all new mains be built of iron after ten years.

In the new industrial towns, the most elementary traditions of municipal service were absent. Whole quarters were sometimes without water even from local wells. On occasion, the poor would go from house to house in the middle-class sections, begging for water as they might beg for bread during a famine. With this lack of water for drinking and washing, it is no wonder that the filth accumulated. Open drains represented, despite their foulness, comparative municipal affluence. And if families were thus treated, one need scarcely turn to the documents to find out how the casual laborer fared. Deserted houses of uncertain title were used as lodging-houses, fifteen or twenty people in a single room. In Manchester, according to the police statistics of 1841, there were some 109 lodging-houses where people of both sexes slept indiscriminately; and there were 91 mendicant lodging-houses. "Playfair told the Health of Towns Commission in 1842 that in all Lancashire there was only one town, Preston, with a public park, and only one, Liverpool, with public baths."

This depression of living quarters was well-nigh universal among the workers in the new industrial towns, once the new industrial regime was fully established. Local conditions sometimes permitted an escape from the extreme of foulness I have been describing: the housing of the mill-workers at Manchester, New Hampshire, for example, was of a far superior order; and in the more rural industrial towns of America, particularly in the Middle West, there was at least a little free elbow room and garden space for the workers. But wherever one looks, the improvement was but one of degree: the *type* had definitely changed for the worse.

Not merely were the new cities as a whole bleak and ugly, environments hostile to human life even at its most elementary physiological level, but the standardized overcrowding of the poor was repeated in middle-class dwellings and in the barracks of the soldiers, classes that were not being directly exploited for the sake of profit. Mrs. Peel cites a sumptuous mid-Victorian mansion in which the kitchen, pantry, servants' hall, house-

keeper's room, butler's and footmen's bedrooms were all placed in the cellar: two rooms in front and two rooms in the rear looked into a deep back basement: all the others were 'lighted' and 'ventilated' by panes of glass high up in the inner walls. Corresponding forms of degraded housing were worked out in Berlin, Vienna, New York, and Paris during the middle of the nineteenth century. The new apartment houses of the middle classes backed upon deep, airless courts that had most of the characteristics of cellars even when they were technically above ground. Only 'backward' towns escaped these infamies.

To judge by popular oratory, these defects were narrow in range, and, in any event, have been wiped out during the past century through the onward march of science and humanitarian legislation. Unfortunately, popular orators—and even historians and economists who supposedly deal with the same set of facts—have not formed the habit of making firsthand surveys of the environment: hence they ignore the existence of clots of degraded paleotechnic housing remaining in almost unmodified form throughout the Western World today: even back-to-back houses, tenements with airless courts, and cellar-lodgings. These clots not merely include most of the workers' dwellings built before 1900; they include a great part of what has been done since, though they show improvements in sanitation. The surviving mass of housing that was built between 1830 and 1910 did not represent even the hygienic standards of its own day; and it was far below a standard framed in terms of present-day knowledge of sanitation, hygiene, and child care—to say nothing of domestic felicity.

"Slum, semi-slum, and super-slum—to this has come the evolution of cities." Yes: these mordant words of Patrick Geddes apply inexorably to the new environment. Even the most revolutionary of contemporary critics lacked genuine standards of building and living: they had no notion how far the environment of the upper classes themselves had become impoverished. Thus Friedrich Engels, in order to promote the resentment needful for revolution, not merely opposed all "palliative" measures to provide better housing for the working classes: he seems to have held that the problem would be solved eventually for the proletariat by a revolutionary seizure of the commodious quarters occupied by the bourgeoisie. This notion was qualitatively inept and quantitatively ridiculous. Socially speaking, it merely urged as a revolutionary measure the miserable process that had actually gone on in the older towns as the richer classes moved out of their original quarters and divided them up for the working class occupation. But above all the suggestion was naïve because it did not perceive that the standards embodied even in the more pretentious new residences were often *below* those desirable for human life at any economic level.

In other words, even this revolutionary critic was apparently unaware of the fact that the upper-class quarters were, more often than not, intoler-

able super-slums. The necessity for increasing the amount of housing, for expanding the space, for multiplying the equipment, for providing communal facilities, was far more revolutionary in its demands than any trifling expropriation of the quarters occupied by the rich would be. The latter notion was merely an impotent gesture of revenge: the former demanded a thoroughgoing reconstruction of the entire social environment—such a reconstruction as the world is perhaps on the brink of today, though even advanced countries, like England and Sweden and The Netherlands, have not as yet grasped all the dimensions of this urban change.