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# Investing in the Early Modern Built Environment

Europeans, Asians, Settlers and Indigenous Societies

*Edited by*

Carole Shammas



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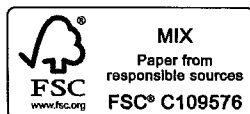
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## CHAPTER TWO

### PROPERTY IN TWO FIRE REGIMES: FROM EDO TO TOKYO

Jordan Sand

Founded in 1600 as the capital of the Tokugawa shogunate, a military regime, Edo developed into the most populous city in the world by the end of the seventeenth century. The population remained relatively stable at roughly one million for a century and a half thereafter. In addition to being exceptional among early modern cities for its size, Edo was probably also distinguished by the fact that it burned more frequently and more profusely than any other city, with the possible exception of Istanbul. Since almost all construction in this densely populated metropolis was of wood and the technology of fire extinguishing was primitive, large fires were routine. Indeed, they were celebrated – at least ironically, in the famous phrase, “fires and fights are the flowers of Edo.”

Yet Edo prospered. The city's limits pushed outward, absorbing its hinterland until the built-up area almost doubled. Goods flowed from throughout the Japanese archipelago to supply Edo's luxury market, making the major dry goods shops, precursors of today's department stores, among the largest emporia in the eighteenth-century world. How did ordinary inhabitants, elites, and the Tokugawa regime cope with the volatility of the physical environment? What role did destruction and reconstruction play in the Edo economy? Edo's combination of urban efflorescence and extreme flammability demands a history unbound by modern social and economic assumptions.

With the Meiji Restoration of 1868, the capital's name was changed to Tokyo. This essay considers the problem of fire in relation to social practice in Edo-Tokyo from the seventeenth through the early twentieth centuries, across the political divide of 1868, which ushered in a profoundly different form of political economy. Behind the problem of fire lies the problem of property, particularly tangible property in buildings and material goods. Property, in turn, may be thought of as the materialization of social practice itself. Just as Marx famously said of the commodity form, that it is “a social relation between men, that assumes, in their eyes, the fantastic form of a relation between things,” property is a “relation between men”

that assumes the form of a relation between men and things. Looking at the destruction of material things by fire in Edo-Tokyo over the long span thus provides us a vivid picture of changing relations among social classes in the city.

The well-known fact that Edo continued to be rebuilt in flammable materials despite frequent conflagration has often invited reference to notions of Japanese (or Asian) fatalism, acceptance of natural processes, or love of impermanence, always posed against a monolithic image of Western culture. Such claims have a venerable tradition in Western writing on Japan. Lafcadio Hearn, probably the most popular English-language writer on Japan in the nineteenth century and certainly the most beloved in Japan, put it succinctly in 1895: "Generally speaking, we construct for endurance, the Japanese for impermanency."<sup>1</sup> Elaborations on this orientalist theme made impermanence the very essence of Japanese building in the interpretation of architects and cultural theorists particularly after 1945 (when American firebombs had burned Japanese cities with exceptional ease).<sup>2</sup> As an explanation, it has the appeal of simplicity and of asserting native Japanese (or Asian) civilization as a virtuous antithesis to Western technological modernity. But it is ahistorical. A more concrete and historical basis for the building of Japanese settlements in flammable materials may be found in the abundance and low cost of timber in the archipelago, the suitability of wood construction to the humid Japanese climate, and the inertia of a long tradition of carpentry. But with the possible exception of the humidity, similar conditions might be cited with respect to the wood-built cities of early modern Europe as well. Focusing more narrowly on Edo-Tokyo, it becomes evident that the flammability of the capital was

<sup>1</sup> Lafcadio Hearn, "The Genius of Japanese Civilization," *Atlantic Monthly*, October 1895; reprinted in Hearn, *Kokoro: Hints and Echoes of Japanese Inner Life* (Boston and New York: Houghton Mifflin, 1896), 18.

<sup>2</sup> The notion of a culture of impermanence lies at the core of postwar Japan's most prominent architectural movement, Metabolism. Numerous architects, both Japanese and non-Japanese, have made statements along the same lines. Lionel Frost's important essay "Coping in Their Own Way: Asian Cities and the Problem of Fire" takes Edo as an instance of an Asian style of city-building, and argues that expendable construction can be seen as a rational choice in urban societies where large-scale fireproofing cannot be enforced. My study of Edo property agrees with Frost on the particulars but not with his general characterization of Edo's civic culture. Lionel Frost, "Coping in Their Own Way: Asian Cities and the Problem of Fires," *Urban History* 24 (1997), 5-16. For further discussion, see Jordan Sand and Steve Wills, "Governance, Arson, and Firefighting in Edo, 1600-1868," in *Flammable Cities: Urban Conflagration and the Making of the Modern World*, ed. Gregory Bankoff, Uwe Luebken and Jordan Sand, (Madison, WI: University of Wisconsin Press, 2012).

anomalous even within Japan. The commercial center Osaka, Tokugawa Japan's second city, burned with approximately one-fifth the frequency of Edo, thanks largely to more fire-resistant construction (the use of roof tiles and plaster-coated exterior walls).<sup>3</sup> We must look, therefore, to specific social and political, as well as environmental factors, that shaped Japan's capital city, rather than to cultural generalizations about Japanese attitudes toward nature and the manmade world.

Under the quasi-feudal system set up by the Tokugawa family, the 250-odd military houses that ruled independent fiefs throughout the country were required to live half their time in the capital and maintain large permanent estates there. Members of the military gentry called *bushi* or *samurai* therefore made up roughly half the population, and servicing this vast ruling class was the foundation of the city's prosperity.<sup>4</sup> Since the Tokugawa shogunate limited foreign trade to the far western port of Nagasaki and allowed no foreign residence elsewhere, the growth of international trade and Western imperialism had little direct impact on the city until the arrival of American gunboats in 1853. The country also remained free of internal war during these two centuries. Despite the bureaucratization of rule over the course of this long peace, the Tokugawa rulers remained military men, whose capital was in theory if not in practice a fortress and encampment. The merchant bourgeoisie that came to flourish in Edo were given considerable autonomy but were never involved in the governance of the city as a whole.

The new government that came to power in 1868, inaugurating the Meiji period (1868-1912), sought to put in place the policies and technology of a more fireproof city, and within three decades succeeded to a greater extent than had the preceding government of the Tokugawa shoguns during 250 years. In a short span of time in the 1870s, 80s and 90s, a congeries of strategies, none in itself invented entirely anew, was brought to bear, and the scale of conflagrations was reduced. Attitudes in government and among the citizenry changed from accepting fire as part of the city's metabolism to regarding it as a foe to be vanquished. In the

<sup>3</sup> Calculated on the basis of data in Murata Michihito, "Kinsei Ōsaka saigai nenpyō" *Ōsaka no rekishi* 27 (1989), 88-105.

<sup>4</sup> *Bushi* is the usual term in Japanese for all members of the military caste, who made up roughly six percent of the national population. Following usage of the time, historians of Japan tend to reserve the term *samurai* for only the subset of *bushi* who held their own fiefs, but since the word has entered the English language as the generic term for the sword-bearing gentry of pre-Meiji period Japan, here *samurai* will be used in this sense.

transition from Edo to Tokyo the city thus moved between two *regimes of fire*, radically different in social and ideological terms.

A map [Figure 2-1] by Yamakawa Kenjirō, Tokyo University's first native professor of physics, shows 91 fires that burned 15 blocks or more over a period of 234 years. The map was published in 1881, just as the Meiji government was launching the first comprehensive fireproofing project in central Tokyo. Yamakawa shows the point of each fire's origin and its point of extinction, in order to illustrate the influence of the prevailing winds each month of the year. Ninety-one fires means a little more than one major fire every three years. These large conflagrations had practically disappeared by the end of the nineteenth century.<sup>5</sup>

Yamakawa's map should be read not only as a document of 234 years of conflagrations in Edo but at the same time as a significant artifact of a new view of the city that was emerging in the second decade of Meiji. For by taking 91 calamitous fires, each its own moment of chaos and crisis, and plotting them in relation to a measurable geography and meteorology, the map imposes a pattern on uncontrolled events, sealing fire within the order of modern science. It accomplishes this graphically by showing the great fires abstracted as straight lines and by showing them cumulatively, encompassing the entire Tokugawa period in a single transhistorical frame.

Yet did the fires of Edo in fact submit to this regime of abstraction? That is, did fires really burn in straight lines? Or is what we are looking at no more than a graphic fiction concocted for scientific legibility? We need to disentangle the human ecology of Edo fires from the lines of Yamakawa's fire map. This is a puzzle to which I will return after examining how the Edo regime of fire worked.

#### *Fire and Tokugawa Governance*

Befitting a military government, the Tokugawa shogunate approached conflagrations on a war footing, deploying vast numbers of men to fight them, expecting them to risk their lives to protect the castle, and showing little concern for the destruction of commoners' houses except as it might pose a strategic threat. With the growth of the city, numerous edicts were issued to promote fireproofing and improve the response to fires, but the

<sup>5</sup> Yamakawa Kenjirō, "Tōkyō fuka kasairoku," *Rika kaisui* 3:2, *Tōkyō kishōhen*, 1881.

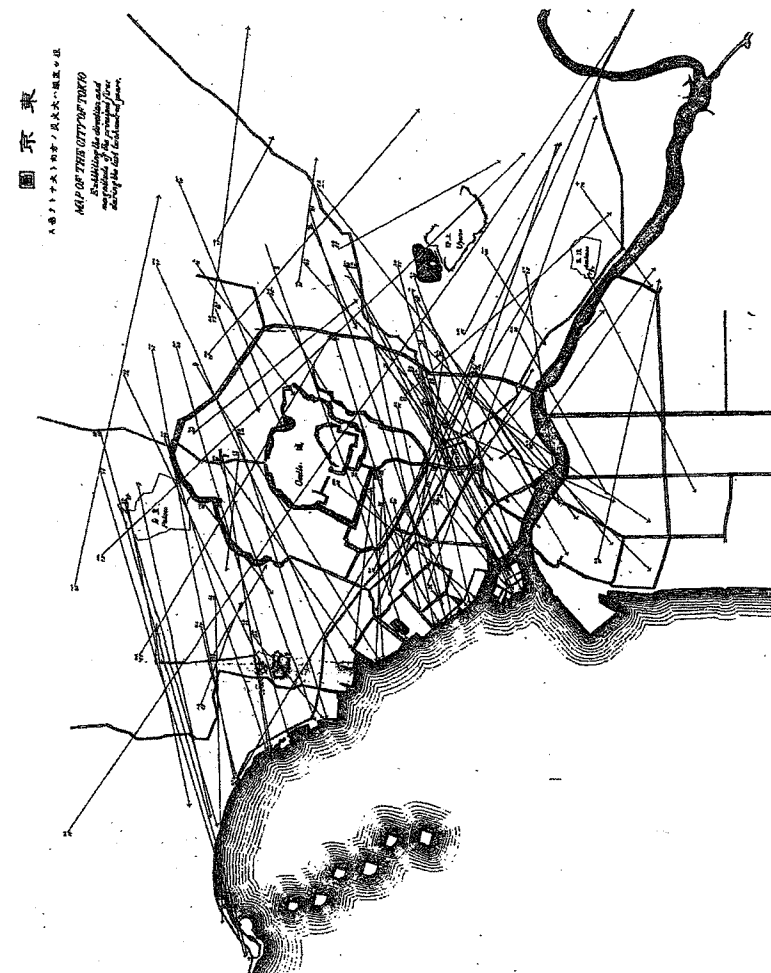


Figure 2-1. Map of Ninety-one Edo Fires over 234 Years in Yamamoto Kenjirō, "Tōkyō fuka kasairoku," *Rika kaisui* (理科會粹) 3:2, *Tōkyō kishōhen* (1881).

regime never created a unified firefighting structure, relying instead on the military houses and commoner neighborhood groups to field firefighters themselves. Protection of the castle remained the shogunate's primary concern.

The castle itself was a sprawling complex of buildings extending over an elevated area of nearly two kilometers square on stone foundations that rose 15.8 meters above a surrounding moat. Although built for military defense, with a towering six-story central keep that would serve as last bastion in the event of siege, the castle was never required to perform a military function. Instead it served as a residential palace and administrative center. All of the buildings were constructed of wood, like the rest of the city, but generally sturdier, coated with plaster and roofed in copper or tile. Beyond the moat, the dense commoners' districts and verdant military estates and temple precincts spread over an area of roughly 44 square kilometers in 1644. This area expanded to almost 80 square kilometers by 1865, near the close of the Tokugawa era. Like most Japanese cities, Edo never had enclosing walls.<sup>6</sup>

Despite the moat and bastions and the manpower expended to guard the castle, embers flying over the walls or fire sparked within the castle precincts destroyed one or more of the castle's five inner compounds on eleven occasions during the 258 years of Tokugawa rule. More minor fire damage occurred within the castle compounds dozens of times.<sup>7</sup> Following the disastrous Meireki Fire of 1657, which destroyed the entire castle together with most of the city, the central keep was never rebuilt. The castle thus became a castle in name only: an impressively fortified city within a city, but built of one and two-story wood buildings. The moats, stone foundations and massive barbican gates around the perimeter symbolized the strength and permanence of Tokugawa rule, but this monumentality did not extend to the actual buildings within.

The aftermath of a great conflagration, like the aftermath of a military campaign, provided opportunities for displays of transcendent and benevolent rule, as Enami Shigeyuki and Mitsuhashi Toshiaki have argued in an imaginative Foucauldian rereading of the meaning of fire policy in

<sup>6</sup> Akira Naito, *Edo, the City That Became Tokyo*, translated and adapted by H. Mack Horton (Tokyo: Kodansha International, 2003), 50, 174–5. William Coaldrake, "Introduction," in Motoo Hinago, *Japanese Castles*, tr. and adapted by William Coaldrake (Tokyo: Kodansha International, 1986), 11–26.

<sup>7</sup> Itō Wataru, "Edojō no kasai higai ni kansuru kenkyū," *Tōkyō rika daigaku sotsugyō ronbun*, 2006, <http://www.rs.kagu.tus.ac.jp/tujimoto/framepage1.html>.

Edo and Meiji-period Tokyo.<sup>8</sup> This was true in the first instance because the shogunate followed major fires with measures such as street-widening and construction of firebreaks, which involved the reparceling of land and the resettlement of large numbers of people, serving as a reminder to the entire urban populace, military, clerical and commoner alike, that they inhabited Edo at the grace of the Tokugawa shogun. These moves were accompanied by demonstrations of shogunal largesse in the form of grants for reconstruction, emergency shelters for the displaced, and alms, particularly distributions of rice. Fires occasioned a virtual potlatch of gifts and loans in all directions. Cash was granted to affected samurai houses according to their fief size (*kokudaka*) and to commoner houses according to their frontage. The tenement-dwelling majority received rice or gruel.<sup>9</sup>

From the eighteenth century, shogunal authorities directed more attention to the prevention and suppression of fire in commoner districts, but still treated it essentially as a problem of social control rather than a public service the government was obligated to provide to citizens. As with other matters, the shogunate addressed the problem through moral exhortation and the threat of punishment against the criminal or negligent. Commoner fire companies were set up in the late seventeenth century and given formal status in 1718. In theory, the activities of these brigades were restricted to property owned by commoners and each was to work within a limited perimeter, but in practice this was impossible, since commoner and samurai lots were complexly interwoven and fires recognized no administrative boundaries. In the latter half of the eighteenth century, the commoner brigades competed with the samurai-led brigades established earlier. By the beginning of the nineteenth century the commoner brigades had become the city's dominant firefighting force.<sup>10</sup> A symbolic watershed came when commoner brigades were first called in to help extinguish embers after a fire at Edo castle in 1747.<sup>11</sup> Although they were

<sup>8</sup> Enami Shigeyuki and Mitsuhashi Toshiaki, *Saiminkutsu to hakurankai: kindaisei no keifugaku, kūkan chikaku hen* (JICC shuppankyoku, 1989), 44–5. I take the term "transcendent rule" from Enami and Mitsuhashi's rather more elaborate "*chōetsugata no kenryoku ruiki*."

<sup>9</sup> Kuroki Takashi, *Edo no kaji* (Tokyo: Dōseisha, 1999), 174–7.

<sup>10</sup> For discussion of competition between brigades, see Ikegami Akihiko, "Edo hikeshi seido no seiritsu to tenkai," in *Edo chōnin no kenkyū 5* edited by Nishiyama Matsunosuke (Tokyo: Yoshikawa kōbunkan, 1979), 91–169.

<sup>11</sup> Kuroki, *Edo no kaji*, 92. For a social history of firefighting and the fire brigades, see William Kelly, "Incendiary Actions: Fires and Firefighting in the Shogun's Capital and the

effective at limiting damage, these firefighters could rarely hope to extinguish a large blaze once it had begun to spread, since the city lacked a pressurized water system.

The commoner brigades came to surpass their samurai rivals, in part, because they were integral to the social order and the physical construction of commoner neighborhoods. Local construction foremen ran the brigades, while rank and file came from among construction workers and roofers. As a consequence, they had more experience with buildings and work in high places than samurai firefighters. In addition, they enjoyed the patronage of wealthy merchant townsmen, at whose houses they did repair work and odd jobs when they were not fighting to protect them from fire.<sup>12</sup>

In the early 1720's, Shogun Yoshimune issued fireproofing orders to downtown districts. Permission was granted to roof houses with tile, which had previously been prohibited as an extravagance. House owners were then ordered, according to location, either to rebuild with heavy clay walls (the storehouse construction known as *dozō zukuri*) or to coat outer walls with plaster (*nuriya zukuri*) within three years, and to cover roofs with either tile, clay or oyster shells. Failure to comply could result in confiscation of the property. After 1725, the shogunate offered reconstruction incentives in the form of cash loans to samurai and relief from tax and corvée to commoners.<sup>13</sup>

This fireproofing campaign met with popular resistance. Commoners petitioned town elders and the shogunate, complaining of the prohibitive costs of reconstruction after what neighborhood headmen described as "years of hardship."<sup>14</sup> One surviving petition, addressed to landlords in the downtown Ise-chō district by a group of land tenants, even referred to repeated fires as a source of the hardship that made it difficult for them to comply with the fireproofing orders.<sup>15</sup> Despite the apparent contradiction,

People's City," in *Edo and Paris: Urban Life and the State in the Early Modern Era*, edited by James L. McClain, John M. Merriman, and Ugawa Kaoru (Ithaca and London: Cornell University Press, 1994), 310–331.

<sup>12</sup> For further discussion of firefighting practice in Edo, see Sand and Wills, "Governance, Arson, and Firefighting."

<sup>13</sup> Following some Japanese scholars, William Coaldrake ("Edo Architecture and Tokugawa Law," *Monumenta Nipponica* 36:3 [Autumn, 1981], 253–261) takes the reform to have been successful.

<sup>14</sup> Yoshioka Yuriko, "Kyōhoki Edo machikata ni okeru sogan undō no jittai: bōsai seisaku o meguru chōningawa no taiō o chūshin to shite," in *Toshi no chihōshi: seikatsu to bunka*, ed. Chihōshi kenkyū kyōgikai (Tokyo: Yūzankaku, 1980), 108–158. *Shōhōroku*, vol. 2, no. 1902.

<sup>15</sup> Paraphrased in Katakura Hisako, *Edo no tochi mondai* (Tokyo: Dōseisha, 2004), 32–33.

this petition suggests what was really at issue: land renters like these petitioners depended on rents taken in their turn from the occupants of cheaply built backstreet tenement houses. Although the tenement managers might profit more from owning more secure buildings, neither they nor their impoverished tenants could afford the additional cost.

How successful Yoshimune's attempt to fireproof the city was in the long term remains ambiguous. Some evidence suggests that substantial fireproofing resulted, with rows of fire-resistant shops and storehouses along front streets creating effective fire lines. Large conflagrations remained common in the following century, however, and when the Meiji regime conducted building surveys, roughly two thirds of the buildings in the city were found still to be roofed in wood shingles, despite their proscription over a century earlier.<sup>16</sup> Whatever was achieved, the program came to an end with Yoshimune's death in 1741.

This campaign should in any case be understood as directed at stabilizing social and economic conditions rather than building a more secure environment for economic development. It was part of a set of policies known to historians as the Kyōho reforms (derived from the era name, Kyōho), which pursued fiscal retrenchment with the aim of returning an overextended ruling elite to solvency. In keeping with the shogunate's morally based conception of economic management, the same edicts that offered loans for fireproofing also enjoined samurai to build smaller houses.<sup>17</sup>

### *Edo-Tokyo Fires and the Question of Property*

Some historians have read in the shogunate's redistributions of people and land after large fires evidence that private property did not exist under

<sup>16</sup> For statistics on construction and roofing materials, see Ogi Shinzō, *Tōkei shomin seikatsu no kenkyū* (Tokyo: Nihon hōsō shuppan kyōkai, 1979), 58–74. On firelines, Miyazawa Takafumi and Hatano Jun, "Edo no taika to bōka seisaku no seika: chōninchi o chūshin ni," *Nihon kenchiku gakkai Kantō shibu keikaku kei kenkyū hōkokushū* 65 (1994), 397–400. Hatano and Miyazawa review data on the area burned in 97 recorded fires between 1721 and 1868 to conclude that the fireproofing order seems to have been effective in creating firelines and reducing the spread of fires in central districts. Citing an essay written a half-century after the reforms that states that the city had been largely rebuilt, architecture historian Ōta Hirotarō suggests that the Kyōho fireproofing was effective for a time, but that conditions deteriorated later. Nishida Yukio, reviewing similar data, judges that in the aggregate, institutionalization of the commoner fire brigades under Yoshimune had a greater impact than fireproofing.

<sup>17</sup> Kuroki, *Edo no kajī*, 213.

Tokugawa 'despotism.' Property, however, is a negotiated set of use rights, not a simple object that can be described as present or absent.<sup>18</sup> In actuality, elite commoners traded in the land titles known as *koken* throughout the Tokugawa period, and in hearing civil suits shogunal courts recognized the rights underlying such trades. By the end of the seventeenth century, the shogunate found itself financially weakened – among other things by large grants made for reconstruction after fires – and increasingly reliant on the merchant elite. It is not surprising, then, that the historical record shows little evidence of arbitrary takings of commoner land after the Kyōho reforms of the 1720's and 30's, although the sovereign right of individual landowners was never stated in law.

The shogunate steadily ceded ground (quite literally) to the city's commoners in negotiations over the use of land in the firebreaks constructed after the great Meireki Fire of 1657. As James McClain has detailed in an examination of the case of the Edobashi firebreak, which was constructed at the entrance to a bridge as a refuge for commoners in a densely built commercial district, town elders (*machidoshiyori*) repeatedly petitioned for the right to build in the open space of the firebreak, pleading hardship because of the cost of maintaining it. The fact that the authorities generally accepted these pleas – and indeed, did more, going so far as to survey the opinions of nearby residents on the proposed construction – reveals that despite its absolute political authority, the shogunate derived its legitimacy from more than coercion, exercising government by what McClain terms “negotiated autocracy.”<sup>19</sup> Gradually over the course of a century, the Edobashi firebreak filled with temporary structures, sheds, and eventually ordinary wooden buildings. While granting increasing property control to Edobashi district commoners, however, the authorities continued to treat the bridge area as a site for fire management, preserving a vestige of its original intent. As late as 1784, a neighborhood head was stripped of his land and banished from the city for renting a house in the firebreak to a

<sup>18</sup> For example, Nomura Kentarō cited in Kuroki, *Edo no kaji*, 197–8. For theoretical discussions of property, see Carol Rose, *Property and Persuasion: Essays on the History, Theory and Rhetoric of Ownership* (Boulder, CO: Westview Press, 1994). Peter Perdue (“Constructing Chinese Property Rights: East and West,” in *Constituting Modernity: Private Property in the East and West* ed. Huri İslamoğlu, [London: I.B. Tauris, 2004], 35–68) makes the case that Western scholarship on property in premodern China has produced a reductionist stereotype of a system without private property. A similar reductionism informed Japanese scholarship until recently.

<sup>19</sup> James L. McClain, “Edobashi: Power, Space, and Popular Culture in Edo,” in *Edo and Paris: Urban Life and the State in the Early Modern Era*, ed. James L. McClain, John M. Meriman, and Ugawa Kaoru (Ithaca and London: Cornell University Press, 1994), 105–131.

group of sumo wrestlers. The shogunate's decision hinged on the determination that the wrestlers had kept a fire in the house, thereby making it a “standard residence.”<sup>20</sup> We see here the flip side of a society in which uncontrolled fire played such a vital part: controlled fire was itself a form of property, the defining feature of a dwelling, and as such, something to be regulated and manipulated by the state.

Between seventy and eighty percent of commoners lived in rented lodgings. People of military status lived on land granted by the shogunate. But samurai seeking private residences away from the official estates also bought land in commoner districts, and many lower officials rented out the land that they had received in grant. The shogunate tried to regulate land use and limit occupancy according to status group but after 1738 came to countenance most of these exchanges. It continued, however, to maintain the fiction that the military grant land could never be bought or sold and therefore that its value was not market-determined.<sup>21</sup>

As in many societies before industrial capitalism, the property rights in Edo commoners' land were layered and complex, making land a sticky commodity. The landowner was circumscribed by paternalistic relations with concierges (*yamori*) and tenants and by obligations to others in the district, and the shogunate tended to respect these relations in court, with the result that the city never became a site of land speculation during the Tokugawa era. The largest merchant houses accumulated land around their shops and rented out tenements in the backstreets, but more for the purposes of holding it as collateral, expanding their primary business, housing employees, or maintaining social position within the blocks where they were located. The Mitsui house, owners of the Echigoya dry goods shop, accumulated parcels of land in nearly one hundred places in the city, but found them a financial burden and sought to sell many by the end of the Tokugawa period. Through arson or simply taking advantage of an accidental fire, tenants often exercised the option to “self-evict” when their rent was in arrears. Even if the tenants came back after a fire, landlords lost money on their investment for all of the time that there were no standing tenement houses to rent while they continued to be obligated to contribute the local taxes exacted for maintenance of the block (*machi*

<sup>20</sup> Ibid., 126.

<sup>21</sup> Miyazaki Katsumi, “Edo no tochi: daimyō, bakushin no tochi mondai,” in Yoshida Nobuyuki ed., *Nihon no kinsei 9: toshi no jidai* (Chūō kōronsha, 1992), 165–172.



*nyūyō*).<sup>22</sup> Katakura Hisako has shown that there were some small and middle-sized landlords investing in land for the profit from rents. In the districts Katakura examined, land values rose over the course of the seventeenth century but fluctuated without clear increase through the eighteenth.<sup>23</sup> Rent reductions forced by government edict in 1843 as part of an attempt to combat inflation resulted in widespread foreclosures, although they did not affect land values uniformly.<sup>24</sup> But in general, landowning commoners, like the shogunate, placed social order before the accumulation of fixed capital. The concierges who rented land from elite commoners and then managed tenements were mostly small shopkeepers living in the block, unlike the landlords, who were increasingly absentee. Custom kept them in place even when land changed hands.

Although the shogunate regulated construction strictly, and new regulations in the Kyōho period called on land holders to make formal requests to the authorities before building, the government appears not to have kept records of particular buildings. Land and buildings were owned and rented separately. Easily built and easily dismantled, houses were not considered to be legally attached to the land. The standard land deed (*kokenjō*) made no mention of what stood on the site, despite the fact that these deeds represented property in what were commonly called *ie-yashiki*, meaning something like “houses and land.”<sup>25</sup> Storehouses built with thick clay walls and underground storage boxes were exceptions: these immovables, designed to protect goods in a fire emergency, were recognized as permanent improvements to a lot.

<sup>22</sup> Ozawa, 126–7. “Self-evict” is Rebecca Scott’s term (personal communication, March 25, 2005).

<sup>23</sup> Katakura Hisako, *Edo no tochi mondai* (Tokyo: Dōseisha, 2004), 95–98.

<sup>24</sup> On foreclosures, see Yoshida Nobuyuki, *Kinsei kyodai toshi no shakai kōzō* (Tōkyō daigaku shuppankai, 1991), 55–59. Data presented by Katakura suggests that in some neighborhoods land values fell as the regime had hoped after the 1843 edicts while in others they rose.

<sup>25</sup> John Henry Wigmore ed., *Law and Justice in Tokugawa Japan: Part VI-A, Property: Legal Precedents* (Tokyo: Japan Foundation, 1977), 27–40 provides examples of laws and disputes regarding the transfer of buildings. Primarily, the authorities showed concern that endorsement be received from local administration in the persons of the five-man group and district headman, and that the parties, including agents such as concierges, all receive approval. This focus on the people relevant to the transaction rather than on the property *in abstractio* accords with much of the practice of status-based governance, and with the accompanying general disregard for exclusively economic matters; Wigmore 85–9, provides examples of Kyōho-era regulations concerning transfer of *ie-yashiki* between townsmen and the establishment of new samurai residences in commoner land (*kakae yashiki*). In the former case, parties to the transfer were required to make a public announcement to kin and neighbors.

In the end, within a system of layered and socially circumscribed property rights, the most certain source of profit from a plot of land came from the human waste that was deposited there. Concierges sold the contents of the tenants’ latrines to farmers from the capital’s hinterland who came to collect it for fertilizer, and pocketed the payments. This fact of the land’s primacy as a site of human defecation returns the question of property in Edo-Tokyo land to its original thingness – that is, to the soil itself as an exploitable resource. After the Meiji restoration, when the government recognized sovereign rights in land, landlords and concierges fought over the rights to night-soil fees. The system of selling human waste – and the disputes – would persist until heavy industry and sprawl during World War I upset the balance between the city and its hinterland, and, district by district, farmers began to demand payment to remove the night-soil rather than offering payment for it.<sup>26</sup>

The categories of things that Edoites sought to guard from fire or to evacuate in time of fire, and the order in which they did so, provide a rough list of the other things of social and economic value in the city. Such a list would begin with persons, followed by sacred icons, then textile goods and their containers, then doors, windows and floor mats – the portable elements of a house – and last wooden structures. Simply put, the rights and interests in each of these may be described as follows: persons and icons were primarily the property of household heads (or the house in the abstract as an enterprise, known as the *ie*) and were protected first; things woven and the chests that held them often belonged to women and were protected next, wood buildings belonged to their builders, landlords and concierges, but were semi-expendable, since easily renewed, and the rights in their removable fixtures varied.<sup>27</sup> One of the obvious effects of frequent conflagration that this list reveals is the priority on mobile property.

Edo’s denizens naturally feared fires and took measures to protect life and limb. Some household heads sent their women to stay with friends and acquaintances out of town during the winter months when the risk of fire was the greatest. Headmen (*nanushi*) in the commoners’ districts

<sup>26</sup> Morita Takako, “Meijiki no Tōkyō ni okeru fudōsan keiei no kindai,” *Shigaku zasshi* 110 no. 6 (June 2001), 65–66, and Hong ō kuyakusho eds., *Hong ō kushi* (Hong ō kuyakusho, 1937), 899.

<sup>27</sup> I include persons as property here (drawing loosely on C. B. MacPherson’s classic formulation of “possessive individualism”) because we may speak of a parent, employer or household head’s property rights with respect to the bodies and capacities of subordinate persons such as family members, apprentices or servants.

reported this to explain to the magistrate why censuses taken in the fourth month and the sixth month of 1725 revealed a discrepancy in the female population of nearly 10,000.<sup>28</sup> If, in an economistic manner, we imagine that household heads did this with a cold eye to costs and benefits, this may be thought of as something like the number of daughters in households with the wealth or connections to place them elsewhere for several months and a greater incentive to preserve them for purposes of marriage than to use their labor at home throughout the year.

The majority of Edo-Tokyo residents, however, stayed in town, where the strategy was simply to travel light and be ready to run at any time. Since the city's dwellings were all one and two stories, with a little advance warning, it was usually possible to pack up essentials and flee to somewhere a safe distance upwind of the fire. Running through the streets to witness one in the early 1880s, American resident Edward Morse found that the Tokyo police stations posted updates on the location and direction of the conflagration within minutes of the alarm.<sup>29</sup>

After persons, the next category of things residents of the capital sought to preserve was sacred objects. The popular guide *Chinka yōjin kuruma* (The Vehicle of Fire Suppression and Precautions), published in 1766, reminded readers to attend to household gods and ancestors after people. This meant religious images, Buddhist votive tablets, registers of ancestors' names (*kakochō*) and altars. Instructions for the employees of the cotton wholesaler Hasegawa written in 1768 also gave priority to the household shrines and altars over other objects in an emergency.<sup>30</sup> These things associated with a household's ancestors constituted a special liminal form of property between persons and goods, since they represented the continuity of the particular household through time, making their value unexchangeable.

The occupants of backstreet tenements would usually have had no such items for ancestor worship, not because of poverty but because their urban abodes were considered temporary, even if most spent their lives in the city. Customs regarding death rites show that the system of property rights in Tokugawa Japan associated land with ancestral spirits. According to Hirade Kōjirō's account of Edo-Tokyo customs *Tōkyō fūzokushi*,

<sup>28</sup> Cited in Kuroki, *Edo no kaji*, 15. This number constituted between 5–6% of the total female commoner population.

<sup>29</sup> Edward Sylvester Morse, *Japan Day by Day* (Boston: Houghton Mifflin Co., 1917), vols. 2, 124.

<sup>30</sup> Kuroki, *Edo no kaji*, 144.

published in 1901, residents were not permitted to dress the corpse of a family member at home unless they owned the land. It was a point of pride for landowners to display the tub in which the corpse had been washed at the funeral.<sup>31</sup> The shogunate had all births and deaths recorded in family registers kept by Buddhist temples. Every Tokugawa subject's true place of residence was considered to be in the place listed in the family register. Rites of death had to be performed in one's original place on the land, not a borrowed place.<sup>32</sup> For the majority whose families were registered in a rural temple parish, residence in the capital was thus considered a temporary state.

After people and ancestral icons, the next type of property to rescue was textiles. Hirade reported that "furnishings are kept as light as possible and carrying gear such as baskets, backpacks (*renjaku*) and bundling cloth (*furoshiki*) are kept always at the ready. Chests are designed to divide into top and bottom halves for convenience of carrying." All of this equipment served primarily to carry clothes and bedding.<sup>33</sup> Published guides to fire preparation gave illustrated instructions on what to take and how to carry it. The exceptionally high casualties in the 1657 Meireki fire were reportedly due to traffic jams caused by unwieldy four-wheeled carts (*kuruma nagamochi*). These were banned subsequently and fell from use. Despite occasional bans and restrictions by Tokugawa authorities, many people carried belongings on the more maneuverable two-wheeled carts (*daihachi guruma*).<sup>34</sup>

Cloth and clothing as forms of property had a variety of meanings beyond the functions of warming the body and covering its nakedness. These meanings became more visible in the aftermath of a conflagration. For the poor, textile goods were often the only thing with which one could get a loan of cash. For the middle classes, fine clothing provided the means to show one's respectability to strangers when one found oneself amid the throngs of refugees displaced by a fire and forced to seek aid from the occupants of houses that remained intact. For the upper class (members

<sup>31</sup> Hirade Kōjirō, *Tōkyō fūzokushi* (1899) (facsimile edition, Nihon tosho sentaa, 1983).

<sup>32</sup> This official fixing of subjects in place persists nominally in the modern family register (*koseki*) system created by the modern state in 1872.

<sup>33</sup> Hirade, *Tōkyō fūzokushi*, 14. Hirade notes in the same passage that recent measures had decreased the danger of fire in downtown districts.

<sup>34</sup> Kuroki, *Edo no kaji*, 115–6. Iwata Kōtarō notes that *daihachi guruma* were widely used for transport of building materials as well in the boom following the Meireki Fire. Iwata Kōtarō, "Toshi keizai no tenkan," in *Nihon no kinsei 9: Toshi no jidai*, ed. Yoshida Nobuyuki (Chūō kōronsha, 1992), 372–3.

of *daimyo* households) – and incidentally also for firemen – dress displayed one's stature. Conflagrations, as events that exposed all classes equally to the eyes of others, presented rare opportunities for ordinarily secluded women of elite households to appear in public in their finery.<sup>35</sup>

In terms of market price as well, textile goods were the most important possessions to protect from fire for most households. Dyed silk and cotton goods were valuable because of the preciousness of the material itself and the amount of labor that went into fabrication. Yet the preeminence of portable textile goods among the material property of Edo households was a mark of the high mobility engendered by frequent fire. It also suggests the degree to which woven materials can structure social and architectural space in a city where the ephemeral nature of the "urban fabric" is assumed.<sup>36</sup> The largest shops in Edo, a few of which employed hundreds of clerks, all dealt almost entirely in silk and cotton cloth. These shops in central districts like Nihonbashi occupied a node in a complex and labor-intensive commercial system that brought raw and partially finished material from sources in the countryside through finishing sites in Kyoto and in provincial cities then onward by ship or packhorse to Edo, where they were kept in storehouses on the edge of the city (away from the most fire-prone districts) before being delivered downtown for retail sale to elite customers. The same cloth continued its life by circulating among a wider population through used clothing stores, of which there were 1,541 in the city in 1851.<sup>37</sup>

Many tenement-dwellers rented their bedding (cotton mattresses and quilts known as *futon*) and mosquito netting (usually woven of hemp and other bast fibers) from pawn brokers and specialized rental shops seasonally, since the former was only necessary in winter and the latter in summer. They pawned these things during the off-season or when they needed cash. In addition to providing a few extra coppers for households

<sup>35</sup> Kuroki, *Edo no kaji*, 42–44.

<sup>36</sup> Another case of the connection between ephemeral urban architecture and textiles is the Turkish squatter's houses built overnight and known as *gecekondu*. See Mary Ann Ray, "Gecekondu" in *Architecture of the Everyday* ed. Steven Harris and Deborah Berke (Princeton: Princeton Architectural Press, 1997), 153–165. In the Turkish case, however, the occupants are seeking to establish a permanent abode.

<sup>37</sup> Yoshida Nobuyuki, "Omotedano to vradana: shōnin no shakai, minishū no sekai," in *Nihon no kinsei 9: Toshi no jidai* ed. Yoshida Nobuyuki (Tokyo: Chūō kōronsha, 1992), 327. This number represents only retailers selling directly to the Edo market. There were a similar number of used-clothing buyers, who carried the cloth to the next step in its life, buying from Edoites to sell back to the countryside, particularly villages in the north.

living hand-to-mouth and saving space in tenements that often had no closets, this was a way of protecting one's property (in this instance, use rights in bedding or netting) against fire, since the pawn shop was likely to have a fireproof storehouse, and if the pawned items were lost to fire anyway, the shop contracted to bear half of the responsibility.<sup>38</sup> The capital had 2,731 pawn shops at the peak of the trade in 1729, roughly one shop for every 350 people.<sup>39</sup>

*Futon* quilts and mattresses became a kind of secondary currency in the backstreets as a result of their durability, portability, uniformity and universal use. Shogunal courts treated suits concerning moneylending separately from other civil suits, and tended to emphasize conciliation when the matter was purely financial, with the common result that the borrower won some sort of amnesty. To get around this, lenders began telling impecuniary clients that they would only lend on the collateral of a rented *futon*. In some instances, the same pawn shop would lend money but have the customer sign for the rental of bedding that was never actually received, then have the customer pay both interest on the loan and damages on the rental. Bedding thus became a kind of bullion, kept indefinitely in the storehouses of pawn shops to back up loans. Under pressure from the shogunate to help put an end to this practice (which was an embarrassment to the elite since samurai were commonly the borrowers), *futon* rental shops devised a system for marking all of their merchandise, pawning of the marked bedding was forbidden, and pawnbrokers were forbidden to rent *futon*.<sup>40</sup>

Kimono were also commonly rented and pawned. Judging from a primer for pawn-shop clerks published in 1873, the expertise needed for appraising pawned goods was overwhelmingly knowledge of textiles. The reader of this primer was asked to memorize a dizzying list of threads, weaves, dyes and patterns, along with their regions of manufacture.<sup>41</sup> The success of the great dry goods shops in bringing this rich array of refined

<sup>38</sup> Shibuya Ryūichi, Suzuki Kameji and Ishiyama Shōjirō, *Nihon no shūchiya: kinsei kindai no shiteki kenkyū* (Waseda daigaku shuppanbu, 1982), 36 and 238. The authors report that it was usual throughout the country that the pawn merchant lost the money loaned and the borrower lost the pawn.

<sup>39</sup> Suzuki Kameji, *Kinsei shūchiya shidan* (Zushi-shi, Japan: Suzuki Kameji, 1972), 179, 183.

<sup>40</sup> Suzuki, *Kinsei shūchiya shidan*, 135–9. On the courts' distinction between moneylending cases and other civil suits, see Dan Fenno Henderson, *Conciliation and Japanese Law* (Seattle: University of Washington Press, 1965), v. 1, 106–115.

<sup>41</sup> Suzuki, *Kinsei shūchiya shidan*, 244–7.

textiles to Edo's mass market is evident here, and behind that the seventeenth-century revolutions in cotton and silk production. The fact that it was particularly textiles, above all else, that mattered to the pawn shop clerk (a key figure at the time in the downward diffusion of elite goods), derived equally from the same characteristics of portability, standardization, and convenience of storage that made them the basic form of movable property in Edo.<sup>42</sup>

The *tatami* mats that covered floors in most Edo houses were also woven, standardized and portable. Made of tightly bound, stiff bundles of reeds covered with a woven rush mat (*igusa*), they were not malleable like clothing or bedding, but could be removed and carted away at short notice. This meant that despite the inherent perishability of the material from which they were made, they had a better chance of long-term survival than the buildings in which they were used. Just as new clothes distinguished the well-to-do from the masses in a city where most had to buy theirs second-hand, floors covered with fresh woven mats differentiated the wealthy man's house from the rented tenement. In other respects, the mats, uniform in size and unpatterned, bore little to distinguish one from another. Among fables of the extravagance of lumber merchant Kinokuniya Bunzaemon, perhaps the most famous of Edo millionaires, is the story that he kept seven *tatami* craftsmen employed full-time just to re-cover the mats in his mansion.<sup>43</sup> Like many such fables, this one is almost certainly hyperbolic, but it is a hyperbole that nicely conjures the way that extravagance would be imagined in the Edo regime of fire: rather than extravagant display of permanent wealth, it describes a display of constant renewal of materials. It further illustrates the importance of woven materials as property and as part of the architectural fabric of the city.

In practical as well as legal terms, Edo's wooden buildings sat in uncertain territory, both because they were easily removed from their sites and because they provided the fuel for the city's frequent conflagrations. When translation of the French Civil Code in the 1880s introduced into Japanese the word *fudōsan* – meaning real estate, but more literally, 'immovable

<sup>42</sup> On standardization and the recycling of clothing, see Susan B. Hanley, *Everyday Things in Premodern Japan: The Hidden Legacy of Material Culture* (Berkeley: University of California Press, 1997), 68–73.

<sup>43</sup> Quoted in Tōkyō Zaimoku Nakagaishi Henshū Iinkai, ed. *Tōkyō zaimoku nakagai shi* (Tokyo: Tōkyō Zaimokushō Kyōdō Kumiai, 1966), 197. Kinokuniya made his fortune buying up stocks from loggers quickly in the aftermath of Edo fires.

property' – there was heated debate about whether the law should recognize it as including buildings.<sup>44</sup> The autobiographical account of Ōzaki Tatsugorō, a speculative builder and adventurer who built hundreds of tenement houses on the periphery of the expanding city in the early years of Meiji, reveals that at least in this setting, houses were entirely in the category of movables even in non-emergency circumstances. In one incident Ōzaki describes, he becomes embroiled in a lawsuit over night-soil rights and decides it is more advisable simply to move all of the tenants on the lot elsewhere and rebuild rather than stay and fight with the landlord. He consults the tenants, the majority of whom agree to follow him, builds 58 new dwellings for them in one part of town, then dismantles the 93 dwellings on the disputed lot and reassembles them in four other locations.<sup>45</sup> Dismantling and moving buildings had long been practiced, made feasible by post-and-lintel construction and joints without metal fasteners. Judging from Ōzaki's description of his own build-scrap-and-build approach, the minimalist construction of Edo-Tokyo tenements made it not only feasible but simple. Additionally, even if the building proper stayed put, everything but the structural skeleton was readily removed. Ōzaki describes punishing tenants who failed to pay rent by removing their doors and *tatami* mats, which, under the generic term *zōsaku* (literally, "manufactured pieces"), were commonly rented separately from the dwelling. If they still refused to pay, he would remove floorboards or roof shingles.<sup>46</sup>

In the same years that Ōzaki was building and renting according to these rough-and-ready rules, officials of the new government were drawing up rules for a national fire insurance law. Although the law itself would ultimately never be enacted, in the process, drafters were compelled to come up with a formal definition of what constituted a Japanese house, in order to make clear precisely what kind of property was to be insured. Their definition accorded with the practices of speculative builders and rentiers like Ōzaki: "in Japanese construction, the roof, ridge, beams, posts supporting the roof, foundation, built-in shutters, floorboards, walls (to the second coat of clay), and pent-roofs will be treated as the building proper, and everything else as *zōsaku* [fixtures] . . . in Western construction,

<sup>44</sup> Wilhelm Röhl ed., *History of Law in Japan Since 1868* (Leiden and Boston: Brill, 2005), 220.

<sup>45</sup> Ōzaki Tatsugorō, "Ōzaki Tatsugorō jiden," recorded by Hayashi Shigeatsu, in Hayashi Hideo, ed., *Kindai minshū no kiroku 4: ryūmin* (Shin jinbutsu ōraisha, 1971), 156.

<sup>46</sup> Ōzaki Tatsugorō, "Ōzaki Tatsugorō jiden," 161.

no distinction will be made between building proper and *zōsaku*.<sup>47</sup> Of course, this also accorded with the common practice of both tenants and owners during fires, as illustrated, for example, in Kobayashi Kiyochika's woodblock print depicting a fire in Ryōgoku on January 26th, 1881 [see Figure 2-2]. In the foreground, a crowd is gathered on the banks of the Sumida River surrounded by what they have carted or carried there to save from the fire. In addition to the large cloth bundles and portable kimono chests, many have brought stacks of *tatami* mats and sliding doors. These people either owned their fixtures or were renting them separately from their dwelling but hoping to claim possession of them by default after the fire.

The large shops had more valuables to lose and better means to protect them. They built fireproof storehouses with tile roofs and walls of clay and plaster up to two feet thick (known in Japanese as *kura* or *dozō*). Merchandise, cash, contracts, and household valuables were kept in these buildings, whose doors and windows were sealed with mud when fire threatened. They were far from infallible, but generally survived if properly attended to in time. A few merchants constructed their entire shop buildings of fireproof clay. Their dwellings, however, often standing directly beside or behind the shop, remained burnable wood construction.

Rapid turnover rather than capital accumulation was the road to commercial success in Edo. The largest businesses like the Shirokiya and Echigoya dry goods businesses were family-run and based in less fire-prone cities in western Japan. Production was located in the countryside. Despite being of clay-and-plaster construction, Shirokiya's Edo shop was damaged by fire 13 times in the 156 years from its construction to the end of the Tokugawa period. Shop records describe the heroic efforts to fight a fire that spread to the Edo shop in 1806 and the aftermath of that fire. In the blaze that swept through the city on the fourth of the third month, 1806, clerks stayed behind to seal up the storehouses until flames were on all sides and they could hardly keep their eyes open. The shop was destroyed, despite their efforts, but no lives were lost. With the fire dying down but not completely extinguished, they returned the morning of the fifth, and built a board fence along the street side of the lot. On the sixth, they fenced the rest of the lot, built a lean-to structure against a surviving storehouse and called in carpenters to discuss building

<sup>47</sup> Kasai hoken torishirabe iin, "Kasai hoken jōrei oyobi hyōka kitei sōan" (1881), in Tōkyōto hen, *Tōkyō shi shikō shūgaihēn* 65 (Tōkyō tochō, 1973), 339.

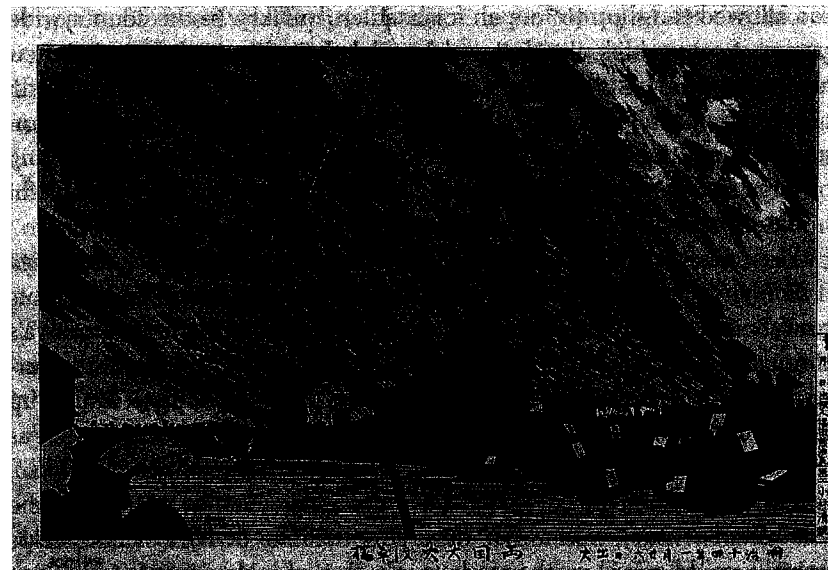


Figure 2-2. Kobayashi Kiyochika, *Fire at Ryogoku, seen from Asakusa Bridge* (1881). Woodblock print. Arthur M. Sackler Gallery, Smithsonian Institution; Robert O. Muller Collection.

a temporary shop. As many as 1,300 carpenters and laborers were hired for the work. Clerks were appointed to twenty-four hour guard over the storehouses. Notice of the fire was sent to the main shop in Kyoto. A neighboring site for a temporary shop was inspected on the ninth. On the eleventh, one week after the fire, they were open for business on this site. It is unclear from this record precisely what had been built between the 9th and the 11th, but something was standing, since the shop chronicle proudly records that out of deference to their neighbors, none of whom had rebuilt yet, they refrained from taking down their fence and hanging out the shop curtain ordinarily used to announce a shop was open for business. Reconstruction of a more permanent shop building began on the 16th and was completed seven months later.<sup>48</sup> With the main shop in Kyoto and waterfront storehouses in Fukagawa, on the far side of the Sumida River from the main commercial districts, Shirokiya was able to limit its merchandise losses, which are not recorded in this account. This

<sup>48</sup> "Kokon kirokuchō," quoted in *Shirokiya sanbyaku nenshi* (Kabushiki gaisha Shirokiya, 1957), 100–103.

also allowed the shop to reopen for business quickly. In the countrywide system of commodity circulation driven by shops like Shirokiya and their customers, Edo was a consumption center in the truest sense of the word: it was anticipated that everything that went into the capital would soon be consumed there – by fire if not by people. The most important thing for large shops doing business in the center city was to keep the pace of human consumption from slowing.

When the shop was doing well, as was clearly the case for Shirokiya in 1806, fires provided wealthy merchants the opportunity to acquire lots from their less fortunate neighbors and expand. The growth of Shirokiya's frontage and branch shops in Edo closely followed the timing of fires during the eighteenth century.<sup>49</sup> Less successful merchants often ended up continuing business indefinitely in structures that had been intended as temporary, put up hastily to attract custom after a fire. *Morisada mankō*, a compendium of Edo and Osaka customs written in the first half of the nineteenth century, noted this, observing that the owners of Edo shops typically could afford neither to keep the business closed for reconstruction nor to move elsewhere.<sup>50</sup> Even Shirokiya found itself in temporary quarters for a decade in the 1860s-1870s, when shogunal rule and the alternate attendance system that brought samurai from around the country to Edo both came to an end, causing a precipitous drop in population and slump in sales.<sup>51</sup>

Small shopkeepers, usually landless but likely to own their own shop-houses, lacked the resources of a large enterprise like the Shirokiya on one hand, but were more reliant on steady and stable accumulation than the backstreet lumpen on the other. How such households fared economically after fires is less clear. Historian Nishiyama Matsunosuke claims that the city's frequent fires created an insecure business environment in which even the large merchants suddenly became backstreet tenants,<sup>52</sup> and Hirade Kōjirō, writing just as the old regime of fire was coming to a close, called fire the city's great "leveler of assets," which made "rich and poor alike almost equal beggars overnight,"<sup>53</sup> but this may reflect more the appearance of things immediately after a conflagration than the actual

impact of fires on wealth distribution. Edward Morse relates the information of a Mr. Scott that Tokyo merchants typically laid aside savings sufficient to survive on the assumption that they would be burned out every seven years.<sup>54</sup> This would be wise planning, if it was indeed practiced, and it accords well with historians' estimates of the frequency of major conflagrations in a nineteenth-century city. In setting rent levels at the time of the 1843 reductions, the shogunate calculated on the assumption that a tenement builder should recover his initial investment after six years.<sup>55</sup>

Recent archeological study has demonstrated that by the end of the Tokugawa period, the secondary commercial streets in the central district of Nihonbashi 1-chōme were dotted with fireproof clay storehouses, but they still appear to have stood on less than half of the street-front lots even in this, the most prosperous part of the city.<sup>56</sup> The more common solution was to store money and other assets underground. Even shops of only twelve to eighteen feet frontage had small cellars, simple submerged boxes built of wood with wooden lids.<sup>57</sup> When fire threatened, the owners hurried their valuables into these boxes, replaced the lids and covered them with sand. They did not serve as permanent safes in most downtown houses because the water table was so high that they were ordinarily flooded. Before use, one had first to bail them out.<sup>58</sup>

The discussion so far should have made sufficiently clear that wood buildings in Edo-Tokyo were treated to a great extent as a renewable resource: not valueless – since great effort was in fact expended to limit their destruction by fire – but not of the kind of enduring value that is ordinarily suggested by the term "real estate," with all of its connotations of long-term investment and hereditary transmission. Like kimono fabric, lumber for buildings flowed into the capital in vast quantities to be consumed. Compared to textiles, it tended to be consumed more frequently and violently. From the time of Edo castle's construction in 1603, timber extraction throughout Honshū, Japan's main island, was fueled by the Edo market. Conrad Totman estimates that reconstruction following the

<sup>54</sup> Morse, *Japan Day By Day*, vol. 1, 355.

<sup>55</sup> Katakura, *Edo no tochi mondai*, 149.

<sup>56</sup> Nihonbashi 1-chōme chōsakai, eds., *Tōkyō-to chūō-ku Nihonbashi 1-chōme iseki* (Nihonbashi 1-chōme chōsakai, 2003). See the map at the front of this volume (fig. 7-1) based on painstaking reconstruction from historical records and excavations.

<sup>57</sup> Tamai Tetsuo, *Edo: ushinawareta toshi kūkan o yomu* (Tokyo: Heibonsha 1986), 143.

<sup>58</sup> Koizumi Hiroshi, *Edo no ana* (Tokyo: Kashiwa shobō, 1990), 143-4. Tamai, 149, notes that specialists in the construction of these cellars used the same techniques used by shipwrights and the makers of bathtubs.

<sup>49</sup> *Ibid.*, 99.

<sup>50</sup> Quoted in Kuroki, *Edo no kaji*, 24.

<sup>51</sup> *Shirokiya sanbyakunen shi*, 230-235.

<sup>52</sup> Nishiyama Matsunosuke, "Kasai toshi Edo no jittai," in *Edo chōnin no kenkyū* 5 (Tokyo: Yoshikawa kōbunkan, 1978), 4.

<sup>53</sup> Hirade, *Tōkyō fūzokushi*, 14.

Meireki fire of 1657 required the clear-cutting of roughly 2,500 hectares of forest. Since the population grew subsequently, reconstruction must have consumed yet greater quantities of wood in the great fires of the eighteenth and nineteenth centuries. In Totman's assessment, the Meireki fire constituted the decisive event in depleting first-growth forest in the main islands and beginning the shift from a purely extractive industry to plantation forestry.<sup>59</sup> But it is also his central thesis that Tokugawa silviculture in this new post-Meireki era was an environmental success, with the result that Japan remained a "green archipelago" despite continued – even increasing – demand for wood in the capital. Another aspect of this regime of forest cultivation and consumption is that it kept a lot of people in work, and kept the city built in fresh materials.

The lumber business itself was a highly volatile one, riding a roller-coaster of booms and busts driven by conflagrations. None of the fortunes of the great Edo-based lumber magnates in Kinokuniya Bunzaemon's time lasted for three generations. Rural merchants came to predominate, having the advantage of proximity to the source, which gave them the edge in responding quickly to the jump in demand caused by a large fire.<sup>60</sup> For the building trades, all that mattered was a sure supply of wood ready for immediate use in reconstruction. Stocks in the city's lumber district, Fukagawa, in the early 1850's have been estimated at around 40–50,000 feet of square-cut timbers. This would not have been enough to rebuild more than a few hundred dwellings, which could easily be swept away in a large fire. The Ansei earthquake of 1855 did far more damage than this, with the result that lumber prices doubled.<sup>61</sup>

Edo's premium on simple and rapid construction methods promoted standardization of building parts, giving final form to the famous modularity of Japanese architecture. In the mountainous areas of Kiso and Kumano in central Honshū, hundreds of kilometers from the capital, timbers were cut to standard lengths for posts, beams, and braces before being rafted toward Edo. Precut ceiling and wall boards, clapboards and

<sup>59</sup> Conrad Totman, *The Green Archipelago: Forestry in Preindustrial Japan* (Berkeley: University of California Press, 1989), 68–9.

<sup>60</sup> *Ibid.*, *The Lumber Industry in Early Modern Japan* (Honolulu: University of Hawai'i Press, 1995), 30–31, 57, 105.

<sup>61</sup> *Tōkyō zaimoku nakagaishi henshū iinkai eds., Tōkyō zaimoku nakagaishi* (Tokyo: Tōkyō zaimokushō kyōdō kumiai, 1966), 317. Calculating crudely on the basis of a hypothetical dwelling unit of 9×12 feet (the common minimum size of a back-alley tenement) built as a simple post-and-lintel cage, 50,000 feet of square-cut timber would yield roughly 300 units.

roof shingles came from closer by. Wholesalers in Fukagawa traded in a list of precut pieces, all determined for particular parts of the structure.<sup>62</sup> By the mid-eighteenth century, builders had an "erector-set" system of interchangeable parts that also facilitated dismantling, transport and reuse of the building itself. Edo was more advanced than other Japanese regions in this respect, with a system of construction based on fixed intervals between posts (permitting precise standardization of the length of horizontal members) rather a module based on floor-mat size only.

### *Life and Limb in the Edo Fire Regime*

What I have not yet mentioned is what matters most in human terms: loss of life, the ultimate measure of how damaging any disaster was. Surprisingly, the number of people who died often goes unremarked in historical accounts of Edo fires. One reason for this may be that the shogunate did not wish casualties to be made public. The massive Meireki fire of 1657 is the one great exception: one contemporary account reckoned the dead at over one hundred thousand (roughly one quarter of the total population of the city at the time), and historians have often repeated this monstrous figure ever since, although it has never been proven.<sup>63</sup> Deaths in other fires were orders of magnitude lower than this. Charting major fires between 1601 and 1859, Kuroki lists the following numbers of dead: over 400 in 1641, approximately 100 in 1660, reportedly as many as 3,000 in 1698, 117 in 1717, as many as 1,000 in 1731, 1,323 in 1745, 14,700 in 1772, reportedly 3,000 in 1798, over 1,200 in 1806, roughly 500 in 1811, 2,800 in 1829, "numerous deaths and injuries" in 1842, reportedly 800 to 900 in 1845, over 300 in 1846, 7000–8000 due to fire and earthquake in 1855, and "reportedly numerous deaths and injuries" in 1859.<sup>64</sup> Even if much smaller than the reported numbers for the Meireki Fire, these casualty figures are appallingly high by modern standards. But taking into account that by the early eighteenth century the population of Edo had grown to roughly one million, the actuarial statistics for Edoites' death by fire may not actually

<sup>62</sup> Totman, *The Lumber Industry*, 32–33, 57; Shimada Kinzō, ed. *Edo-Tōkyō zaimoku tonya kumiai seishi* (Tokyo: Doi ringaku shinkōkai, 1976), 572–3.

<sup>63</sup> The source is *Musashi abumi*, by Asai Ryōi, first published in 1661. Naitō Akira cites other accounts, one of which put the death toll at 9,653 and another at over 37,000. Naitō Akira, *Edo to Edojō* (Tokyo: SD Sensho, 1966), 63. With discrepancies this great, clearly no accurate estimate is possible.

<sup>64</sup> Compiled from Kuroki, *Edo no kaji*, 229–235 except for the Ansei earthquake of 1855.

have been so bad. Certainly premature death from epidemic disease was more likely.

More strikingly anomalous is that large fires destroying multiple blocks were far more frequent than fires resulting in deaths. Yoshihara counts 1,798 fires in the city recorded during the Tokugawa era, and since the surviving documents are far from complete (both public and private archives having been destroyed by fire many times), it is reasonable to assume that many more than this number occurred on a smaller scale. Only about 5% of recorded fires in the latter half of the Edo period resulted in deaths. Concluding a report on a fire in 1880 that destroyed 16 blocks and 2,112 tenements, displacing 5,986 people in the dense central district of Kanda, the mayor of Kanda Ward noted that by good luck the fire had occurred during the day and there had been neither deaths nor injuries. The following year 21 blocks in a different section of Kanda burned, displacing 7700 people, again without reported deaths or injuries.<sup>65</sup>

How was it possible for thousands of houses to be destroyed and thousands of people to be sent fleeing by a massive conflagration without report of a single death or injury? This brings us back to the puzzle of the straight lines in Yamakawa's map. Simply put, they speak a partial truth. Lacking the technology to extinguish large fires, firefighters took a controlled burn approach, their main task being to remove roofing and tear down flammable buildings along the flanks of the fire, leaving it to burn unchecked downwind until it reached water or open fields. Carried by prevailing winds (which, as Yamakawa observed, most often came from the Northwest), Edo's fires tended to leave a long, narrow trail of damage. Meanwhile, through habit and an effective system of warning bells, well-trained Edo residents usually found time to pack and flee to safety outside the path of the conflagration, where they could wait and watch. Only the worst fires, which came roughly once a generation, caused large loss of life. While they rightly feared fires, Edo residents knew that the chances were good that they could safely enjoy the spectacle.

### *The Meiji State and Fireproofing*

The practice of widespread government charity following fires continued in the early years of the Meiji period, the gifts now showing the largesse

<sup>65</sup> *Tōkyō shi shikō, shigaihen* 64, 384–5, 661.

of the imperial house (which was moved to the shogun's former capital and installed in place of the shogun after the Meiji restoration) as well as the municipality.<sup>66</sup> Yet government authority in the modern regime of fire was demonstrated through new strategies of urban planning and new forms of engagement with the populace. The Meiji government's 1872 reconstruction of the front street of the Ginza commercial district into an approximation of a European-style boulevard lined by brick-built shops with colonnaded facades created an icon for the modern capital and for fireproofing policy. In social terms, the Ginza project was just another redistribution of land and population similar to those of the shogunate when it built firebreaks. But in 1872, less than five years into the new era, the regime was aiming for something iconic, not an absence like a firebreak, but a fireproof showpiece in the center city, conspicuously placed on the route that foreigners took from the port into town. Like the model silk-reeling factory in the provincial city of Tomioka – also built of brick in 1872 – the Ginza buildings and their arcades would demonstrate to the Western powers that Japan was on the road of capital accumulation. Brick announced that the capital would have fixed capital.<sup>67</sup>

Alongside this almost theatrical gesture, the Meiji government insinuated its new regime of fire more quietly into the lives of Tokyo residents by sending around inspectors who conducted surveys of fire-damaged and of fire-prone districts, then eventually of every plot of land in the city. Under the tutelage of German government adviser Paul Mayet, these surveys were to build the foundation for a national fire insurance plan. Although the plan itself failed to win the approval of the House of Counselors (*sanjūin*), the surveyors' work became part of a public campaign to inculcate a new awareness of buildings as capital. 253,844 structures were surveyed and 410 varieties distinguished. Districts were divided according to fire risk, and the total value of built property in each was calculated on the basis of average prices for each of five basic categories of construction. No such comprehensive study of built property in the city had been attempted before. The Asahi newspaper reported that some people had tried to interfere with the survey out of suspicion that it was intended to raise rents or that the surveyors were actually thieves. The newspaper

<sup>66</sup> Makihara Norio, *Kyakubun to kokumin no aida: kindai minshū no seiji ishiki* (Tokyo: Yoshikawa kōbunkan, 1998), 25.

<sup>67</sup> Fujimori Terunobu, *Meiji no Tōkyō keikaku* (Tokyo: Iwanami shoten, 1990), 1–52. For later disputes about the permanence of brick construction and its suitability in Japan, see Gregory Clancey, *Earthquake Nation* (Berkeley: University of California Press, 2006).



itself urged readers to cooperate, explaining that the survey was part of a plan to "share the burden of fires" so that when they occurred, the city would be "less distressed by them." Meanwhile, a translated lecture of Mayet's on insurance circulated in published form and was discussed in the newspapers, bringing into common parlance the term *hoken*, a Japanese neologism for insurance.<sup>68</sup>

In 1881, the Tokyo city government initiated its most far-reaching fireproofing plan, establishing fire lines along major downtown streets and ordering the owners of buildings on the facing lots to rebuild in fireproof materials such as stone, brick, or the traditional clay and plaster within three years. Owners of structures behind the main streets in the same districts were ordered to re-roof in tile or other flame-resistant material. The Meiji program came to an end in 1887, its goals largely accomplished. Property owners had been compelled to invest a certain percentage of the property's value in a three year fund set up as part of the new postal savings system. This seems to have yielded the necessary cash for much of the rebuilding. At the same time, a substantial proportion of the lots in affected areas changed hands in these years, indicating that many owners without the means to rebuild had been forced to sell.<sup>69</sup> Fireproofing thus became part of a broad redrawing of the city's social geography that disembedded property from local social relations and removed the poor from central districts.

Although the late nineteenth-century fireproofing strategy was the same as Shogun Yoshimune's in the early eighteenth century, Meiji officials differed in their motivation, conceiving the city in a way that would have made little sense to him. Overall, Yoshimune's Kyōho reforms, like other retrenchment efforts of the era, sought to limit unnecessary consumption. A more active administrator than most of his dynasty, Yoshimune had perceived consumption of the city by fire as one more extravagance his government could ill afford, and made it incumbent on each of the social groups under his rule to rectify this consumption problem and return to living within its means. In contrast, the governor of Tokyo, who led the campaign for new fire laws in the 1880's, emphasized the need to break

<sup>68</sup> *Tōkyō kasai hoken kabushiki kaisha gojūnenshi* (1938), 15–17; Fujimori Terunobu, *Meiji no Tōkyō keikaku* (Iwanami shoten, 1990), 58–9. For price calculations, *Tōkyō shi shikō shigaihen* 65, 310–11. The new government's identification of individual buildings as capital is evident also in the increased detail with which fire damage was recorded. Statistics on Meiji fires include the number of structures burned, whereas Tokugawa records typically indicated only the number of blocks.

<sup>69</sup> Fujimori, *Meiji no Tōkyō keikaku* 79–85.

free of past custom, calling upon citizens to rebuild in a manner fitting to a "national capital" and stressing the "enormous costs" that had been incurred in the past.<sup>70</sup> As suggested by the calculations of the insurance surveys, the "costs" spoken of here included not only the loss of life and material property in past fires, but the loss of potential profit (both economic and diplomatic) that might be enjoyed in a fireproof city.

The introduction of banks, postal savings, and private fire insurance in the Meiji period gradually obviated underground storage of money and valuables. But the city's small shopkeepers did not immediately welcome these modern institutions and the new regime of fire to which they belonged. There was particular hesitation about fire insurance and about investing money (through the postal savings system) for the purpose of fireproofing. As they had in the Kyōho era, householders in the central districts protested to the authorities that the financial burden of fireproofing was beyond their means.<sup>71</sup> This time, however, the state refused to accommodate the city's poor.<sup>72</sup>

By the turn of the twentieth century, the new regime had won a victory, but the difficulty in the first two decades of Meiji rule suggests either that shopkeepers had only weak consciousness of property value in the shop building itself or that they simply could not imagine a city that did not burn habitually, or both. Tōkyō Kasai, the country's first private fire insurance company, stressed in advertisements that insurance permitted secure mortgaging of property "even if the house is built of wood." At the head of the company's first printed guide to insurance regulations, the president listed four merits of fire insurance: (1) It encourages the people's diligence; (2) It smoothes financing in society; (3) It makes building construction magnificent (*sōbi*); and (4) It reduces house rents.<sup>73</sup> The company here chose to stress the benefits of their unfamiliar new product to society as a whole rather than to address the economic self-interest of the individual property-owner. Individual owners could not be expected to assume that

<sup>70</sup> Quoted in Ozawa Emiko, *Saigai toshi Edo to chikashitsu* (Tokyo: Yoshikawa kōbunkan, 1998), 184–5.

<sup>71</sup> Tamai, *Edo*, 146.

<sup>72</sup> The transformation here requires a study in itself. It took place in numerous areas, including new police actions, court recognition of sovereign land rights in cases between landlords and concierges, and the relinquishing of price controls on rice. See Morita Takako, *Kindai tochi seido to fudōsan keiei* (Tokyo: Hanawa shobō, 2007); Makihara Norio, *Kyakubun to kokumin no aida: kindai minshū no seiji ishiki* (Tokyo: Yoshikawa kōbunkan, 1998); and Matsuyama Megumi, "Kindai ikōki no Edo, Tōkyō ni kansuru toshishiteki kenkyū," (Ph.D. diss., Tokyo University School of Architecture, 2004).

<sup>73</sup> *Tōkyō kasai hoken kabushiki kaisha gojūnenshi* (1938), 131–3.

fire insurance was a sensible investment, after all. By invoking the higher cause of society as whole, the company drew upon an emergent sense of bourgeois commitment to national progress precipitated by the Meiji revolution. Meiji fireproofing policies for the capital's downtown, although to a considerable extent replicating in substance the policies of Shogun Yoshimune in the Kyōho reforms, succeeded in part because they could invoke this sense of national purpose.

A kind of *modus vivendi* and survival knowledge had accompanied the Edo regime of fire, which persisted in practical fact if not in policy until the early twentieth century. In his diary of life in Tokyo in the late 1870s, Edward Morse concluded his remarks on the subject of the city's fires with a vignette of households starting over, rebuilding civilization with a controlled fire in the aftermath of uncontrolled fire:

With their belongings they erect a sort of wall made out of partition-screens, a bureau, and mats standing up, and behind these the family are gathered; fire is in the hibachi and water is being warmed for tea, and a little bonfire enables them to broil a fish or to make a little soup, and in the open air, which is not cold except in winter, they seem just as happy as ever.<sup>74</sup>

Morse's description romanticizes, no doubt, but the observation itself was probably not distorted. Whether or not these refugees were "as happy as ever," they had survived and they knew well how to cope in what was, for many, a commonplace misfortune. Uncontrolled fire in Edo had been incorporated into the social and material fabric of urban life. Rulers and ruled together had fashioned a regime of fire that was part of the way the city functioned. Governance in this regime devoted itself to maintaining status-based stability without concerning itself with the protection or promotion of capital growth; trade in the highly developed commercial economy was based on the optimal circulation of movable property with minimal accumulation of fixed property; dwelling for the majority of the population was semi-nomadic; and a cultural frame for this mode of living accommodated – even embraced – periodic destruction and renewal.

#### *Coda: Technomass*

Suppose one could weigh a city – calculate the total built mass of everything formed by human artifice or brought from elsewhere and assembled

<sup>74</sup> Morse, *Japan Day by Day*, v. 2, 128.

there by human labor. The result might be called the city's "technomass." What would a comparison of the technomass of different cities, or of cities in different eras reveal? Or of the biomass/technomass ratio in different cities? A calculation of technomass would tell us something about how much human energy was required to erect the city, or to reconstruct it after a disaster. At least indirectly, evidence suggests this to have been very slight in Edo-Tokyo's case during the seventeenth through nineteenth centuries.

After the Meiji Restoration, a bourgeois elite, supported by a government committed to making the city a site of capital accumulation, led the transition to a fire-suppression regime. With the assistance of the Meiji government, the bourgeoisie succeeded in pushing the poor into slums and factory districts on the expanding margins of the city. When a pressurized piped water system with hydrants was completed for the central wards in 1899, technology in the service of fixed capital seemed to have triumphed over uncontrolled fire.

Yet, despite virtual eradication of the largest fires, in the modern period a higher proportion of fires resulted in deaths.<sup>75</sup> This is striking, particularly when one thinks of the amount of fire-preventative infrastructure that had been installed beginning in the 1880s. This too may be imagined as a matter of technomass: the total mass of material put into building the city and sustaining life had become much heavier with industrialization. A heavier city may burn less often, but it presents a greater danger to human life when it does burn. As Stephen Pyne has shown in detail for the case of woodland fires, so for urban fires too, the pursuit of absolute suppression comes at a cost in new forms of hazard, less frequent but potentially more deadly.<sup>76</sup>

At the moment that massive fire casualties seemed a thing of the past came the Great Kantō Earthquake of September 1st, 1923, which resulted in 100,000 deaths, the vast majority of them due to fire. Comparison of this catastrophe with the equally violent Ansei Earthquake of 1855 is suggestive. Although fires erupted over a similar range of locations in both cases, the results were radically different. A large part of the difference was probably due to wind conditions. Many other variables would need to be considered as well to fully assess the difference between these two unique

<sup>75</sup> Nishida Yukio, *Kōshō: Edo no kasai higai wa sukunakatta no ka* (Tokyo: Jūtaku shinpōsha, 2006).

<sup>76</sup> Stephen Pyne, *World Fire: The Culture of Fire on Earth* (Seattle: University of Washington Press, 1995), 183–295.

events. The bare contrast of the death tolls seems hard to overlook, nevertheless, for the two figures differ by more than an order of magnitude: in 1855, 7000–8000 dead, in 1923, 100,000. Something about the impact of fire and the response to fire must have changed in the intervening 68 years. One thing often cited is that the water system failed in 1923, in effect throwing people back into Edo conditions. But the city had changed in other ways. The working-class districts were built up with heavy industry, storing lots of chemicals. Population here was denser than before. The disastrous results in 1923 revealed that modern fires burned hotter with more fuel per square meter, and suggest that residents, more encumbered by belongings, more often living in places from which it was difficult to escape, were less able to save themselves.

Today, postindustrial conditions suggest the possibility of new fire regimes along with new configurations of fixed and movable property and of people claiming rights in them. Many of the sites of rapid urbanization since the 1970s – in Latin America, South and Southeast Asia, and Africa – have been characterized by spontaneous low-rise settlements built of ephemeral materials, giving them more resemblance to Edo than to modern Tokyo. Although fire presents a problem for all of these settlements, it seems unlikely that the modernist urban regime, directed toward capital accumulation and the chimerical goal of a zero-hazard environment, is likely to be the right model for thinking about or building in such places. The highly socially evolved, low-technomass urbanism of Edo may be more instructive.

## CHAPTER THREE

THE IMPACT OF FIRE AND FIRE INSURANCE ON EIGHTEENTH-CENTURY ENGLISH TOWN BUILDINGS AND THEIR POPULATIONS<sup>1</sup>

Robin Pearson

Eighteenth-century England was the site of the first mass insurance industry, the risk business *par excellence*, and the location of important developments in scientific method, including actuarial science, inductive logic and the laws of probability.<sup>2</sup> The German sociologist Ulrich Beck has called this kind of development the birth of the 'risk society', where the business of risk analysis was taken over by scientists, mathematicians, engineers, geologists and actuaries, while the risk perceptions of the ordinary citizen were proclaimed 'irrational' and irrelevant.<sup>3</sup>

Fire insurance companies appeared in London in the 1680s, accompanying the transition to a more permanent and durable built environment in English towns. By 1720 ten companies had been established, six of which – three mutuals and three joint stocks – survived the financial crisis associated with the South Sea Bubble and went on to monopolize the property insurance market in London for the next 60 years. Their aggregate sums insured rose to £53m in 1750 and £149m in 1782, at which point a new joint-stock company, the Phoenix Fire Office, was launched by a group of wealthy London sugar refiners. The business of the London mutuals was largely confined to the capital, but the stock companies, to varying degrees, extended their underwriting nationwide, and, led by the Phoenix, to overseas markets in Europe, the West Indies and North America.<sup>4</sup> From

<sup>1</sup> I wish to thank Carole Shammas, Arwen Mohun and Frederika Teute for their helpful and challenging comments on the conference version of this paper. I have also profited from conversations with Bernard Herman.

<sup>2</sup> Lorraine J. Daston, *Classical Probability in the Enlightenment* (Princeton: Princeton University Press, 1988); Ian Hacking, *The Emergence of Probability* (Cambridge: Cambridge University Press, 1975); Geoffrey Clark, *Betting on Lives: The Culture of Life Insurance in England, 1695–1775* (Manchester: Manchester University Press, 1999); Barry Supple, *The Royal Exchange Assurance* (Cambridge: Cambridge University Press, 1970).

<sup>3</sup> Ulrich Beck, *Risikogesellschaft: Auf dem Weg in eine andere Moderne* (Frankfurt/Main: Suhrkamp, 1986).

<sup>4</sup> Aside from a small number of local mutual offices established in Charleston and Philadelphia from the 1740s onwards, there was little fire insurance in the United States