

# Family and Home

## The Chimney

There are some technological developments that seem initially so modest, and that grow so quietly, that even in our own day no one would wonder about their impact until long after the effects were irreversible. [...]

For heating, the Romans used braziers and hypocausts (radiant heating). Braziers burned charcoal and were thus costly to operate; moreover, in a room tightly closed against the weather they were dangerous: the Emperor Julian, wintering in Paris, was once nearly killed by carbon monoxide from a brazier. Hypocausts were inflexible and wasteful of fuel because they heated the entire mass of the masonry of floors or walls. In the variable climate of Northern Europe, and especially in winter, they would not do. During the early Middle Ages, whether in hovel or royal hall, people centered their lives around a fireplace in the middle of a room with a high, louvered roof to carry out the smoke. Unfortunately it carried out much of the heat as well.

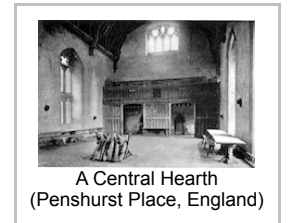
By the ninth century the central fireplace was occasionally moved to a corner of the room and was covered by a hood or mantle to catch the smoke and take it out through a hole, or even up a chimney. Experimentation with the design of chimney stacks led to the discovery that a draft of air can be brought down the flue to reverse itself and draw off the smoke while leaving much of the heat to be radiated into the room. Moreover, replacement of louvers by chimneys meant that fireplaces could be located on any level of a multistoried building and not merely under a roof directly beneath the sky. In the eleventh century chimneys and mantled fireplaces became common in the dwellings of the great. By the end of the twelfth, even the poor were enjoying them.

Much more than simple comfort was involved. In the days of the old central fireplace, to keep warm in Northern Europe everyone from lord and lady to humblest servant lived and ate together in the great hall, and slept there, too, normally in curtained compartments. Society was hierarchical, but the strata knew each other intimately. With the new flexibility of heating made possible by chimney and mantled fireplace, privacy could be implemented. Lord and lady increasingly ate, lived, and slept in withdrawing rooms. As affluence increased, noble residences were redesigned so that rank after rank of the social structure could enjoy the new sense of individuation in its life style. To Dresbeck's remark that the chimney may have affected the art of love more than the troubadours did, one may add that it may likewise have fostered the individualism of the later Middle Ages more than all the humanists.

Yet a high social price was paid for the new ideal of the idiosyncratic person. As communication between classes decreased, class consciousness and snobbery grew. By the 1370s William Langland was assessing the chimney bitterly:

Woe is in the hall each day in the week.  
There the lord and lady like not to sit.  
Now every rich man eats by himself  
In a private parlor to be rid of poor men,  
Or in a chamber with a chimney, And leaves the great hall.

The chimney is as important as any other single factor in the shift from medieval to modern Occidental attitudes, and not all of this process was good. I doubt, however, whether anyone much earlier than Langland could have assessed properly its less desirable effects, and by that time the process could not be turned back.



A Central Hearth  
(Penshurst Place, England)

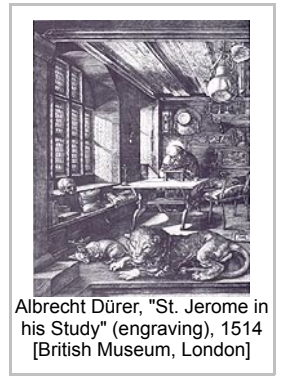


Tile Stove  
(1577/78, southern Germany)  
Victoria & Albert Museum,  
London

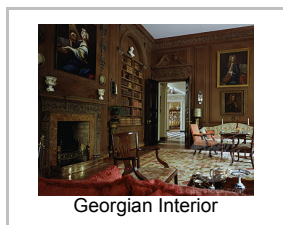
—From: Lynn White, Jr., “Technology Assessment from the Stance of a Medieval Historian” in *The American Historical Review*, 79 (1974): 1-13.

## The Transformation of the Gentleman's Study

What a change has taken place between the modest workplace depicted by Albrecht Dürer and the eighteenth-century gentleman's study! The bare ceiling, stone walls, and planked floor have been replaced by delicate plasterwork, wallpaper, and a fitted carpet. Instead of small, blurred panes the windows contain large pieces of clear glass, and their frames slide conveniently up and down for ventilation. There is much more furniture, and a larger variety of it: special chairs for writing at the desk, easy chairs with padded arms for reading, a sofa for conversation, low convenient tables. What is more, this is furniture designed for relaxing in, quite unlike the hard back-stools and plain benches of two centuries before. Even the table for writing is made especially for that purpose. No longer improvised out of planks laid on a demountable trestle, the desk is a delicately carved mahogany [124] box with a curved front that slides smoothly back to reveal useful-looking drawers and pigeonholes. Upright commodes with drawers have replaced chests; books are kept in tall cupboards with glazed doors. The overall effect, seen through Dürer's eyes, is one of an increased density of objects and decoration and also a pronounced softening effect, due not only to the upholstered furniture, but also to the patterned paper that covers the walls, the heavy cloth that is draped over the library table, the curtains drawn apart on each side of the window, and the soft carpeting on the floor.



Albrecht Dürer, "St. Jerome in his Study" (engraving), 1514  
[British Museum, London]



Georgian Interior

The end of the eighteenth century marks a point roughly halfway between Dürer's time, where we began, and the present day. Histories of furniture tend to focus our attention on the evolution of design and ignore the more fundamental issue of ownership. The achievement of the eighteenth century was not just the production of comfortable and elegant furnishings, but their availability to a broad clientele. This fact would have impressed Dürer the most; this level of comfort was present not in a royal palace, but in the home of a moderately well-off family. That a

private individual might personally own dozens, if not hundreds, of books would have astounded Dürer, as would the idea of devoting a special room in the home exclusively to writing and reading.

Yet from our vantage point, a surprising number of things had not changed at all. The Georgian study was still heated — and not very effectively — by an open fireplace, or, if it was on the Continent, by a porcelain stove not much different from what Dürer had been accustomed to. The writing desk was elegant, no doubt, but people still wrote with a quill pen dipped in ink. At night, they read uncomfortably by candle-light, just as Dürer had done two hundred years before. If a letter writer wished to wash his ink-stained hands, he was obliged to call a servant for a bowl of water — there were no [125] sinks or plumbing. Nor were there bathrooms — a small cupboard in the corner contained a chamber pot.

[Excerpt from Witold Rybczynski, *Home* (Penguin, 1986), chapter 6 ("Light and Air"), pp. 123-25]

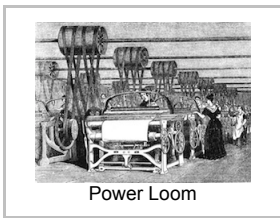
## The Industrial Revolution: From Home to Factory

The essential change which the Industrial Revolution brought was not in machines but in method. The Industrial Revolution was only incidentally a change in industrial techniques; it was more profoundly a change in industrial organization, [namely, the transfer of] many of these industries from the home into the factory. Within two generations, roughly between 1760 and 1820, the customary way of running industry changed. Before 1760, it was standard to take the world to villagers in their own homes. by 1820, it was standard to bring everyone into a factory and have them work there.



Distaff Spinning

[For instance, consider] the making of woolen cloth. Characteristically, this was carried out in many steps. Sheep were reared and then shorn; the wool was cleaned and combed. It was then spun into thread, and the thread went to the individual weaver, who had a weaving frame in his own home and wove the cloth on it. In principle, the weaver was a private manufacturer; that is, in principle he bought the thread, he owned his frame, and he sold the cloth himself.



This detailed procedure suffered from two drawbacks. First, not all parts of it were equally mechanized. The weaver's frame was an effective machine, but the spinning wheel was not. Anyone could spin who had the minimum sense of touch needed to draw an even thread and, as this needs little skill, spinning was therefore only a minor occupation of women — as the word 'distaff' still reminds us. A weaver at work could keep many hands spinning. [...] Second, there was little

money in spinning, with its low productivity, and those who could gave it up whenever possible, in order to do the necessary work of house and farm. It was a seasonal occupation, which was dropped at seed and harvest time, and was therefore a bottleneck at the mercy of its occasional workers.

Another handicap in the organization of the woolen industry was economic. In principle, the weaver was his own master: he bought the thread, he owned the frame, and he sold the finished cloth himself. But he had little to fall back on if times were bad, and he got into debt. He had to borrow, that is to say he had to ask for credit, from the man from whom he bought either the raw wool or the spun thread. The only security he could offer for the loan was his weaving frame. In practice, therefore, even in the seventeenth century many weavers were in effect merely workmen for the wool merchant to whom their frames were mortgaged.

The wool merchant commonly had his headquarters in a small town around which the weavers' villages clustered. The weavers would come into town on a given day, often a Friday, and sell their pieces of woolen cloth. With the money, the weaver would buy fresh wool; but if times were bad and there was a surplus of cloth, he would have to ask the merchant to keep the cloth and would have to get wool on credit against it. In this way, the ownership of the wool, the weaving frame, and the finished cloth tended all to fall to the one merchant. Thus, in a practical sense, the weaver became a workman for wages — the uncertain wages made up of the difference between what he got for his cloth and what he paid for his wool.

This relationship became common in many industries: the woolen industry of Yorkshire, the cotton industry of Lancashire, nail and needle making around Birmingham, the making of gloves and stockings and hats, and many others. It became convenient for the merchant to send his agents into the working homes, to take the raw material there and to bring back the finished goods. He now had an investment in these homes, and needed to keep a sharp eye both on the tools and on the materials there. [...]

The early factories were organized in a number of different ways. In some the worker still brought his own tools — he did this in the Sheffield steel industry down to the present century — just as a skilled fitter brings his own tools today. Whatever the detailed organization, however, the factories turned out to have several advantages. They gave the owner control of the materials and the working hours. They enabled him to rationalize operations which needed several steps or several men. They made it possible to use new machines which could be worked by unskilled women and even children under supervision. And they allowed these machines to be grouped around a central source of power.

— From: Jacob Bronowski and Bruce Mazlish, *The Western Intellectual Tradition: From Leonardo to Hegel* (1960), pp. 308-10.