

WHAT KEEPS BUILDING COSTS HIGH

BY HOLMAN HARVEY

TWIn houses recently were built, one on each side of the line that divides two Long Island towns. In one house the room partitions were built of panels or pre-hardened plaster board, fire-resistant, mass-produced and erected at the cost of a few hours of labor. The other house, a stone's throw away, had partitions of lath and plaster, built the slow way by highly skilled labor. Two building codes were in conflict. One village code permits dry-wall construction, the other demands wet-wall construction.

Dry-wall construction is permitted by most nationally established safety standards for one- and two-family houses, yet many building codes still insist on lath and plaster. The difference in cost in a five-room house on Long Island, for example, is something like \$250 or more, largely for labor.

This is just one illustration, selected at random from thousands, of the senseless tangle of building codes enforced by more than two thousand American towns and cities. The codes

strangle progress in the building industry. Manufacturers of materials and supplies cannot standardize their products and get the economy of mass production, because they have to make a score of sizes, designs and models to obey the varying regulations of different localities. This is one reason that homes cost too much. Another reason is that hundreds of codes are out of date and thus prevent or delay the use of anything new — and there are scores of new things in the building industry, most of them designed to save the home builder money.

The situation has been a scandal and a source of despair to progressive builders and manufacturers for years. So many of the regulations seem based on pure whim. One county in New York State — Nassau county on Long Island — has 65 different building codes; three of them, covering about 50 per cent of current building, differ in 200 particulars. It would be impossible to draw plans and specifications for a home that would be legal every-

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where in this one county. There are good reasons sometimes for differences in codes. For example, Albany insists that roofs be strong enough to carry a snow load of 50 pounds per square foot. Such a requirement would be ridiculous in Miami. But there is no good reason whatever for variations within the small flat urban county of Nassau.

William Levitt, America's biggest home builder, who puts up 10,000 homes in one continuing operation, says that costs can be boosted from 5 to 25 per cent by the various local codes in Nassau County.

Codes in many midwestern communities say that basement walls must be twelve inches thick where the U. S. government accepts eight inches as adequate. Millions of sound American homes have been built with eight-inch basement walls, and some have endured for a century. Added cost on an average home: well over \$100.

Many codes demand that a chimney be built of brick or stone, by masons. A pre-manufactured flue can be had at a saving of about \$55 in the Washington, D. C. area, up to \$150 in some parts of the country, and be just as safe. The building codes of New York and many other cities do not permit the use of pre-manufactured chimneys, although at least three leading makes have been listed by national fire-safety laboratories

and accepted by the U. S. government.

Many local codes ban simplified designs for roofs, furthered by the U. S. Housing and Home Finance Agency, that would save \$80 per average house; and new Government-approved designs for septic tanks can save \$150 more where central plumbing is not available. A combined saving of \$230.

II

Your local building code comes down from centuries of human experience with habitations. It exists to insure your physical safety, and your health, as a dweller. Under safety come protection against fire; against collapse of roof, walls or floors — due to snow loads, windstorms, earthquakes or other causes; safety of the foundation against moisture, rodents and insects; safety against noxious fumes from plumbing and sewerage. Under health come ventilation, light, sufficient space and the cleanliness of a weather-tight dwelling. But on all of these basic points local building codes are in violent conflict. What is held to be safe or healthful by one community is ruled out by its neighbor.

In heavily populated areas where housing is most needed, local codes are entrenched, backed by police powers delegated by the states in the early days of the country. Town coun-

cils may enforce any code they wish.

In one Pennsylvania county — Allegheny, where Pittsburgh lies — 129 subdivisions maintain 129 diverse codes. Of Pittsburgh's own code, adopted in 1947, the National Association of Home Builders says it is so restrictive that builders can no longer erect low-cost housing. Modest homes built in the outskirts must have the Class A plumbing of a mid-town skyscraper.

Honest difference of opinion is responsible for many of the variations in building codes. In addition, pressure lobbies work at the local town hall for code amendments which will serve their ends; and hundreds of codes have been subverted to protect subcontractors with materials to sell, labor groups determined to keep as many men as possible at work on your house, and manufacturers seeking to exclude superior products. For instance:

Plumbing brings water into the home and takes waste from it, and several kinds of pipe will serve satisfactorily. But many codes insist on lead plumbing, others demand galvanized steel, still others demand cast iron. Fitting lead joints requires skilled hand labor. But copper piping, which also does not rust, can be bent around corners, eliminating an enormous amount of labor. Many codes flatly rule it out, by the negative

process of specifying one of the other metals.

In 1947, the National Bureau of Standards set up three typical plumbing systems for small houses, using transparent plastic piping to study the flow. It found that "back venting" of plumbing fixtures was only one of several acceptable methods; and in even earlier studies it was found that a "house trap" to seal off sewer gases was not needed under ordinary circumstances. These devices add substantially to building cost, but code authorities cling to them, supported by subcontractors and local labor groups. Another instance:

Although the National Electrical Code for years has recognized flexible electric cable, which can be bent around corners, codes bar it for most purposes in some communities, including Elizabeth, N. J., Baltimore, Peoria, Ill., Milwaukee, Los Angeles and Burbank, Cal., and Colorado Springs. In most of these, and in a number of other communities, rigid metal conduit or electrical metallic tubing, requiring hand-fitted joints, is demanded — at greatly increased expense.

Costs pile up, and the nation's inventive genius is frustrated in almost every attempt to reduce them as it has done in all other major industries.

Many new materials have emerged in the past ten years or so which re-

duce the cost of home building or increase efficiency. But 55 per cent of community codes are more than ten years old — 12 per cent older than 25 years. When they were drafted they specified the use of materials then known to be dependable. Among modern materials discriminated against in many outdated codes are: Foam-glas, a highly efficient insulation material developed in the laboratories of Pittsburgh Corning; plastic wall tile; composition wallboard of various types; glass brick; and rustless aluminum nails.

Some older American communities impose excessive code restrictions to exclude low-cost housing. Not long ago a New York State village used its code, by abruptly amending it, to block erection of 300 new homes. A Pennsylvania town similarly kept out \$10 million worth of needed new housing, wishing to preserve a local architectural tradition against "mass building." But exterior design might better be controlled under the community's zoning power, or by a local fine arts commission, rather than by code restrictions which increase the cost of functional, invisible parts of a home. Higher costs have little to do with acceptable design, and low-cost homes, well planned, may take their place in any setting.

The first effort to prepare a basic building code for nation-wide use

came from the National Board of Fire Underwriters, in 1905; their recommended National Building Code, now in its sixth major revision, has been widely consulted and used.

About 35 years ago, harassed local building officials began to work toward the ideal of a standard code; and in 1927 the Pacific Coast Building Officials Conference issued its Uniform Code — now in use, in whole or in part, by a large majority of West Coast communities and by others as far east as the Mississippi and beyond. It has been revised at three-year intervals. Ten years later, the New England Building Officials Conference issued a uniform code in mimeograph form, but it was not kept up to date. Four years ago, the Southern Building Code Congress published a standard code now in use by 150 communities. It emphasizes Southern materials and practices. The Building Officials Conference of America, founded more than 30 years ago, began to evolve, four years ago, a new kind of uniform code — the "performance code."

III

A performance code, advocated since the 1920s by the U. S. government, demands only that a building material "perform" according to a prescribed standard. A wall, for instance, must resist fire for at least 45

minutes, whatever it may be made of. Any material, old or new, which meets the required standard becomes automatically acceptable. A real performance code could never be outdated and would never require revision. Its simple performance requirements keep it abreast of latest improvements as they arise.

But today the country's local codes, as well as the standard regional codes (sold to communities at around \$3 a copy), are mainly "specification codes." They specify precisely the kind of materials which can be used, and the exact sizes and amounts of those materials; and materials not mentioned are not used. Philadelphia and other cities have specified for years that partition framing shall measure two-by-three inches, whereas other cities say it shall be two-by-four inches. To keep a specification code current would require a revision at least once every three years, at great expense.

In preparing its first comprehensive performance-type code, to be published late this year, the Building Officials Conference of America, Inc., with headquarters in New York City, has spent \$90,000, with no compensation for the 100 experts who participated. (An abridged code for structures up to three stories, known as the ABC, was issued last January.) Already inquiries have come from all

quarters of the world, for code troubles are universal. The National Association of Home Builders, composed mostly of newly-called "merchant builders" who will erect this year some 80 per cent of the nation's new houses, has approved the BOCA code, and its 130 local associations have set up committees to work for its adoption by communities. The nationally recognized architect, Carl G. Lans, will coordinate the program. Leading national manufacturers of housing materials also support the new code and the idea behind it.

Under the BOCA plan, the maker of a new material or device will pay a recognized, independent laboratory to test it under supervision of the Building Official's Foundation, affiliated with the Association. If the product fulfills the performance standard set up by the code it will be certified as acceptable. Test reports are to be made monthly to local building officials.

At the same time, the Federal Housing and Home Finance Agency is working on a performance-type code exclusively for small dwellings, which is expected to be completed within five years. Last year, this Agency issued a uniform plumbing code, now substantially followed by BOCA.

State-wide codes would relieve local officials of the staggering respon-

sibility which lies upon them today, and would simplify the housing problem of the nation. Each state could modify a standard national code to meet its own geographical conditions of snow, high winds, earthquakes or exceeding moisture. At least eight states now have state-wide building statutes of limited scope; only a few of these cover one- and two-family houses. Massachusetts' 1947 law is the most advanced. A board of standards can approve new materials, and methods of construction, and all communities must permit their use regardless of their local code restrictions. Any Massachusetts town can have its code modernized at state expense. But Massachusetts allows the *enforcement* of local codes to stay where it belongs—in the hands of the community.

Prefabricated housing has suffered severe reverses because of building codes, and this is one reason that many of the concerns which started out ambitiously after the war, with hundreds of millions of dollars of invested capital, are now in near bankruptcy.

A hard-hitting drive to bring order and unity into the making and en-

forcing of building codes has now begun over the nation, and your help as a citizen is needed. Enlist the support of your civic association, club or lodge, or organize a special group for local code reform. Make it clear to members of your town government that you want *your* town to act now to bring about a single, state-wide, uniform code, based on modern performance standards. Insist that your state legislators support legislation to establish such a code, and make it mandatory.

Your local newspapers will help. The National Association of Home Builders will send you a complete program of action, including prepared speeches; and will send speakers to visit your group from the nearest of its 130 campaign committees. Perhaps one of these committees already is at work in your town. An inquiry to NAHB headquarters, Washington, D. C., will bring an immediate response at no cost.

Unification of the nation's building codes is a primary necessity if construction costs are to be brought down and America is to be well and comfortably housed in the years ahead.



DOWN TO EARTH

by ALAN DEVOE



ANTHROPOMORPHISM FOREVER

ANTHROPOMORPHISM is a long and difficult word for a very easy and almost spontaneous human practice: the ascription of human characteristics to things not human. A carpenter anthropomorphizes when, having trouble driving a nail, he says that "it doesn't seem to want to go in." A housewife anthropomorphizes when she mislays a thimble and wonders irritatedly where it is "hiding." It is anthropomorphism when we talk to our automobile, urging it up a hill or chiding it for stalling, and it is anthropomorphism again when, having stumbled against a chair in the dark, we kick the wretched thing for its impudence. Anthropomorphism pervades all our life, coloring and enlivening it, peopling the empty places, mitigating a little the terrible fact of our aloneness.

Where anthropomorphism is con-

cerned with inanimate objects, it is seldom, of course, more than half serious. We do not suppose that chairs and walking-sticks "really" have personalities like ours. We do not suppose that actually we will induce the dice to fall in a certain position, when we plead with them and coax them before the throw. We do not believe that, after we have driven a golf ball, we can really influence it to change its course by all those agonized body-twistings and grunts of encouragement. We do not believe these things, at any rate, with the rational part of our conscious mind. But there is an area, deep down in the subconscious, where we believe them. Philosophers engage in everyday anthropomorphism as incurably as witch-doctors. Our own self is the one thing in the world that each of us really *knows*, by immediate experience; and it is an everlastingly natural gesture to project that self everywhere, to read it into our fellow creatures and objects