



PRESERVATION AND CONSERVATION ASSOCIATION

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“The Past Has A Future”

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LUSTRON HOUSE: PORCELAIN STEEL DREAM

In the years immediately following the second World War, housing was in short supply and high demand. The government was encouraging home construction of any kind, and into this boom stepped a man with an idea for a prefabricated house that he, and others, felt would forever revolutionize the housing industry. But within a few short years of capturing the government's and the people's imagination, his dream of mass-produced, all-steel housing would be swept away with the fall of the auctioneer's gavel. The man was Carl Strandlund and his dream was the Lustron house.

Carl Gunnar Strandlund, originally from Sweden, was an industrial engineer. Before embarking on the Lustron venture, Strandlund had successfully run the Oliver Farm Equipment Company. From there he went on to become Vice-President and General Manager of the Chicago Vitreous Enamel Company, a company that made money by putting an enamel finish on such items as toilet stalls, laundry chutes, washing machines, store fronts and auto service stations. Strandlund sold the idea of porcelain enamel as an integral part of an all-steel structure to the Standard Oil Company of Indiana. However, when Standard Oil was ready to start building the structures after World War II, government building controls banned all but essential house-building. The government asked Strandlund if he could build houses instead of filling stations, and Lustron Corporation was born.

The basic design of the Lustron house was both functional and logical. Starting with 2 bedroom models, Strandlund expanded to 1 and 3 bedroom models in 1949. Weighing about 10 tons, the houses were made entirely of steel, with the exception of the concrete slab floor, its asphalt tile finish, and other items,



such as windows, mirrors, switches, electrical conduit, and pipes. These items, plus the lot, were not included in the average purchase price (around \$7,000 although it did go up) of the Lustron house.

The prefabricated frame was bolted to a concrete slab. The wall panels, which went into the frame, were designed to interlock and then be screwed into place. There was some insulation between the interior and exterior walls, but heat loss through single glazed windows and the concrete floor slab could be great, especially in northern climates. The exterior panels, which give the Lustron house its peculiar appearance, were 2-foot square. The ceiling panels were 4 foot squares, and the entire interior walls consisted of panels extending ceiling to floor, eight feet tall and two feet wide. Even the roof shingles, door jambs, corners and gables were made of porcelainized steel.

The Lustron house had another distinctive feature besides its unconven-

tional appearance. Heat was provided by a radiant heating system installed close to the ceiling. The system sent heated air through a ceiling plenum, half going to the living area, the other half going to the sleeping area. Five to 10% of the heat was bled into the exterior walls to reduce the chances of moisture condensing and to increase the radiant heating surfaces.

The Lustron house also boasted many built in features, such as cabinets, shelves, closets, and dressers. Having so much built in, and built of steel, made for a rather inflexible space, but consulting architects Blass and Beckman designed for convenience and economy of space.

One more unusual feature about the Lustron house; the only hinged door was the front door, all others were either sliding doors or pocket doors.

When Strandlund proposed building Lustron houses, some perceived it as an industrial revolution of housing. Certainly the government saw it as

worthwhile, for the Reconstruction Finance Corp. (RFC) loaned Lustron \$15½ million 15 minutes before its emergency lending power expired on June 30, 1946. A second loan for \$10 million was granted in the summer of 1948, and a third loan of \$7 million was given in February of 1949. The government also leased Strandlund's company the Curtiss-Wright war plant in Columbus, Ohio in which to set up shop.

Initially, Lustron houses held great mass appeal. Besides the high-tech appearance, Lustron emphasized its low rate of depreciation, ease of maintenance (the houses came in four pastel colors — blue, tan, gray, and yellow — which never needed painting), ease of cleaning, and its ability to withstand vermin, decay and fire. In fact, the design was praised for its "handsome colors, the subdued gleam of its mat finish, the look of . . . cleanliness and imperishable newness." The public liked them. It would seem, then, that success was assured. Such was not the case. There were problems getting the houses to the dealers and many early houses arrived at construction sites with parts missing, resulting in massive delays. Workers were not well trained in assembling the houses, which resulted in more delays. Codes were an additional problem for Lustron. The porcelain enamel walls kept the houses outside the city limits of Chicago, while copper plumbing kept it out of those areas where it was banned in favor of cast iron pipes. Lastly, by the time the bugs had been worked out, the housing boom was starting to wane.

The year 1950 found Lustron in default of \$22 million of the \$37.5 million that it owed to the RFC. The company was said to be losing \$1,000,000 a month. Strandlund was asked to step down from his role at Lustron or face foreclosure. He refused to step down, and the RFC foreclosed.

With lawsuits pending from dealers of the houses, and with no buyers to be found for the now defunct Lustron Corporation, all of the inventory, raw materials, and equipment used for production were auctioned off for a total of \$430,000.

What had started as a bright, popular idea in 1946 ended four years, and millions of dollars, later. But some of the Lustron houses still stand, evidence of the basically sound construction and engineering that went into them. In Champaign-Urbana there are at least six Lustron houses known to still exist. They are located at 504 South Lincoln in Urbana, and 302 South Elmwood, 1201 West Green, 1011 West Hill, 1109 West

Clark, and 818 West Columbia, all in Champaign. There are also a number in Monticello. This is a considerable number, considering that only 3,000 were produced and sold. Champaign-Urbana's number of Lustron houses may be due to the presence of Kuhne-Simmons, a Lustron dealer with a background in heavy construction, who did a considerable amount of work for the University of Illinois.

Despite the brevity and expense of the Lustron Corporation, it played a role in the history and development of prefabricated housing. These houses are reflective of the time in which they were developed and their quality cannot be disputed — they are still standing, maybe not as bright and shiny as when they first rolled out of the old Curtiss-Wright plant, but still, in their way, revolutionary.

Next month, "Living in a Lustron."

This article was researched and written by Angela Graham Finet.

THE PROBLEM SOLVER: Getting Your House Ready to Paint

With the advent of warm weather, many homeowners' thoughts have turned to the need for painting their house. PACA would like to make that task easier. To help with color selection, we suggest "A Century of Color" by Roger Moss and "Exterior Decoration: Victorian Colors for Victorian Houses," republished by The Athenaeum of Philadelphia; both available for browsing from PACA. In addition, the *Old House Journal* has numerous articles on painting; indexes and back issues are on file with PACA.

But just as important as choosing the colors is preparing the surface of the house to receive the paint. To help with that all important job, PACA has excerpted the following advice from the March, 1986 issue of *Southern Living*.

Why Won't the Paint Stay Put?

If the paint on your house starts to crack and peel too soon, it's probably due to a moisture problem. Water can creep in behind the paint and actually force it off the surface of the house. Moisture problems need to be corrected before repainting.

Points of entry for moisture include leaking roofs, leaking eaves, cracks around doors and windows, split siding, exposed endboards and downspouts, and gutters stopped up with leaves.

If your house is tightly sealed, with

no vapor barrier and inadequate ventilation, the moisture in the house will escape through the walls. This is often a problem in smaller houses. Peeling paint caused by this problem will be most obvious under the eaves, on the outside of the attic, and on the outside walls of kitchens, baths, and laundry rooms.

To prevent this, vent washers and dryers, install exhaust fans in kitchens and baths, and make sure the crawl space, attic, and eaves of the house are vented. To release moisture trapped in wall cavities, insert small metal vents, top and bottom, into each cavity. If you have clapboard siding, use wooden wedges between the boards to increase airflow. It's also a good idea to cover the ground in the crawl space with sheet plastic to keep moisture from the soil from getting up into the house.

Moisture is not the only culprit in paint failure. Other causes include improper preparation, incompatibility of paints, and excessive layers of paint (more than ⅛ inch thick). All you can do to correct this last problem is to clean off the flaking paint and try again.

Proper Preparation

After correcting the cause of any moisture problem, you can start getting off that loose paint. This is a tedious job with limited alternatives. For scraping a few problem spots, you can use a flexible putty knife, paint scraper, or wire brush, and a lot of elbow grease. You may not have to scrape back to the bare wood, just back to sound paint.

Feather the edges of the scraped areas. A power sander helps (orbital sanders are the easiest to control). Be sure to wear goggles to protect your eyes from flying chips and a dust mask to keep from breathing the dust.

If you have to remove the paint down to the bare wood, there are several ways to do it, but each has its drawbacks. The easiest method — if you can stand the way the house looks in the process — is to just let the paint peel off as it would naturally, scraping and priming the bad spots each spring.

You can use a power sander to take off layers of paint. Again, be sure to wear protective gear.

You can use heat to remove paint from siding. Never use a blowtorch to remove paint, however. It will scorch the wood and could even set the house on fire. The best heat tool for stripping paint from siding, especially shingles, is the heating pad. It's small, safe, and light-weight, but it only works on flat surfaces.

A heat gun can be used on uneven

surfaces and areas with solid wood, such as a porch or a paneled door. Do not use the gun on siding with open cavities. The hot air could set small combustibles inside the wall on fire. The hot air will also break glass, so don't use it to strip windows.

Some homeowners use the heat method on large, flat surfaces and then switch to chemical strippers for balusters and other trim. Shutters can even be taken down and stripped in a vat.

Chemicals can be used to strip the whole house down to the bare wood. The ingredients in chemical strippers have, in the past, been too dangerous for nonprofessional use. However, improved formulas have made them safer.

If you follow the directions given by the manufacturer, you should be able to use a chemical stripper successfully, but you must be prepared to deal with a mess.

If the exterior paint on your house is only worn and the film has not cracked, all you'll probably need to do is clean the surface thoroughly. This cleaning is important because residue left on the siding will interfere with the bonding of the new paint.

Power washers can be rented for about \$50 a day. They are also good for knocking off flaking, peeling paint. However, although the powerful blast of water gets the job done in a hurry, you run the risk of pitting the surface of wood or masonry. There is also a chance that you will shoot water into cracks in the siding and damage interior plaster or insulation.

Another handy device you may want to use to clean siding is a car-washer brush that attaches to the end of a garden hose. The bristles are soft and will not harm the siding.

Usually, there's more to clean than just dirt. You may have to tackle mildew around the foundation or on the roof, salt deposits under the eaves, or the residue left by chalking paint (chalking is the way some paints clean themselves). The chalk may also have washed down onto the masonry, causing streaks that need to be cleaned.

Glenda Herman of the North Carolina Agricultural Extension Service gave us her formula for cleaning the exterior.

Herman combines 3 quarts of water, 3 ounces of TSP (trisodium phosphate), 1 ounce of household liquid detergent, and 1 quart of liquid bleach. She warns that, after cleaning, the siding should be rinsed well with clear water or the residue may interfere with adhesion of the new paint. Let the surface dry thoroughly before starting to paint. You should also cover surrounding shrub-

bery with plastic.

This solution should eliminate mild cases of dirt and mildew. Extremely mildewed areas, however, may need a second coat or a stronger solution of bleach or a mildewcide.

Discoloration from a water-soluble material found in some wood can migrate to the surface of paint and stain it. Resin from knots can also stain the surface. These two problems are best treated with an oil-base, stain-blocking primer. Latex paints can be used over this primer later with no problems.

To get rid of rusting nailheads, sand the spots and set the nailheads, if necessary. Then, use a rust-inhibiting primer to seal them. Other rusting iron and metal surfaces should be cleaned with a stiff wire brush or sandpaper and then sealed with the primer.

BUILDING BOOM BEGINS WITH MONEY IN SIGHT University Community Grows

Investors are Confident that Institution Will Continue to Grow and Become Greater.

Visions of a four million dollar appropriation to the University by the state legislature and a commensurate increase in equipment and in the number of students attending the Institution have started the most remarkable building boom of a decade in the Twin Cities.

As might be imagined most of the building investments are going into residences in the student sections in the Fairland district of Champaign and in the southwestern part of Urbana. Nine new residences, under process of construction, can be counted from the corner of John and South Second streets. Practically all of the new homes are destined for private residences but accommodations for from five to a dozen students are to be found in the majority of them. The wary householders have learned that a large number of undergraduates demand modern accommodations, little caring as to their cost. It is due largely to that condition that the new buildings are of a high standard and that their quality will be a credit not only to the two towns but the University as well. Rents have soared beyond all anticipations in the student sections during the

Efflorescence — white and green powdery deposits on stucco, brick, and concrete — must also be removed. Small areas can be cleaned by scraping with a wire brush. Efflorescence is caused by salt deposits and moisture on the surface. To keep it from reoccurring, you must find the source of the moisture and block it.

Chalking paint that has washed onto masonry can also be cleaned off with a wire brush. If that doesn't get all of it, you may have to use muriatic acid.

After the house is scraped and clean, replace loose, dry caulk; fill surface flaws; and sand them smooth. Sand any glossy, unweathered areas that may reject the new paint and replace any rotten siding or trim. Make sure all bare wood and metal is primed, and you're ready to paint. *continued on page 4*

past few years. Formerly there was little difference between the rentals here and in other cities of like population, but that was before the University started to grow. Since the legislature has untied the purse strings and appropriations have been made greater, the state institution has developed with great strides and Champaign and Urbana have gone along with it.

But it is not alone the residence district that is growing. Contracts have been let for two modern blocks down town. Champaign is assured of two new theatres next year, and a new business district is growing up about the University campus. Local business men have acquired the tract just north of the new Y.M.C.A. building on Wright street and there is a probability that a great dormitory will be erected the coming summer. Two new club and fraternity houses, costing twenty to thirty thousand dollars respectively, are already under way, and plans for a third are being drawn. When to these improvements are added the new buildings under construction at the University the total construction work of the year will amount to considerably over a million dollars.

"Deja vu?"

from The Daily Illini, May 6, 1909



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Additional information on painting the old house is given in the May, 1986 issue of the *Old-House Journal*. The entire issue is devoted to this topic and includes articles on exterior color, the correct brush for the job, proper masking and checklists for preparation on both interior and exterior jobs. PACA also has available a National Park Service technical publication "Exterior Paint Problems on Historic Woodwork." This brief identifies and describes common types of paint surface conditions and failures, then recommends appropriate treatments for preparing exterior wood surfaces for repainting to assure the best adhesion and greatest durability of the new paint.

Good Luck!

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