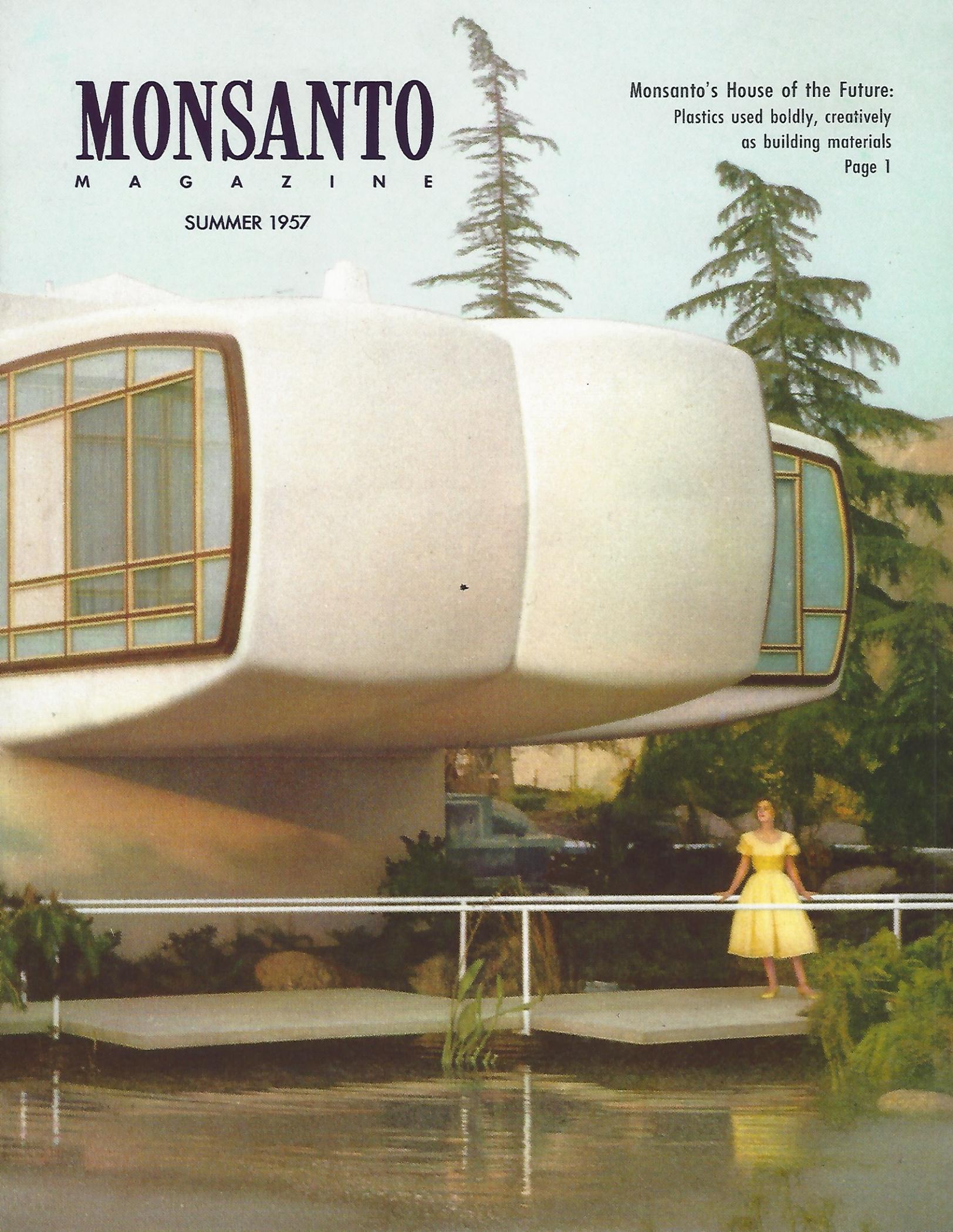


MONSANTO

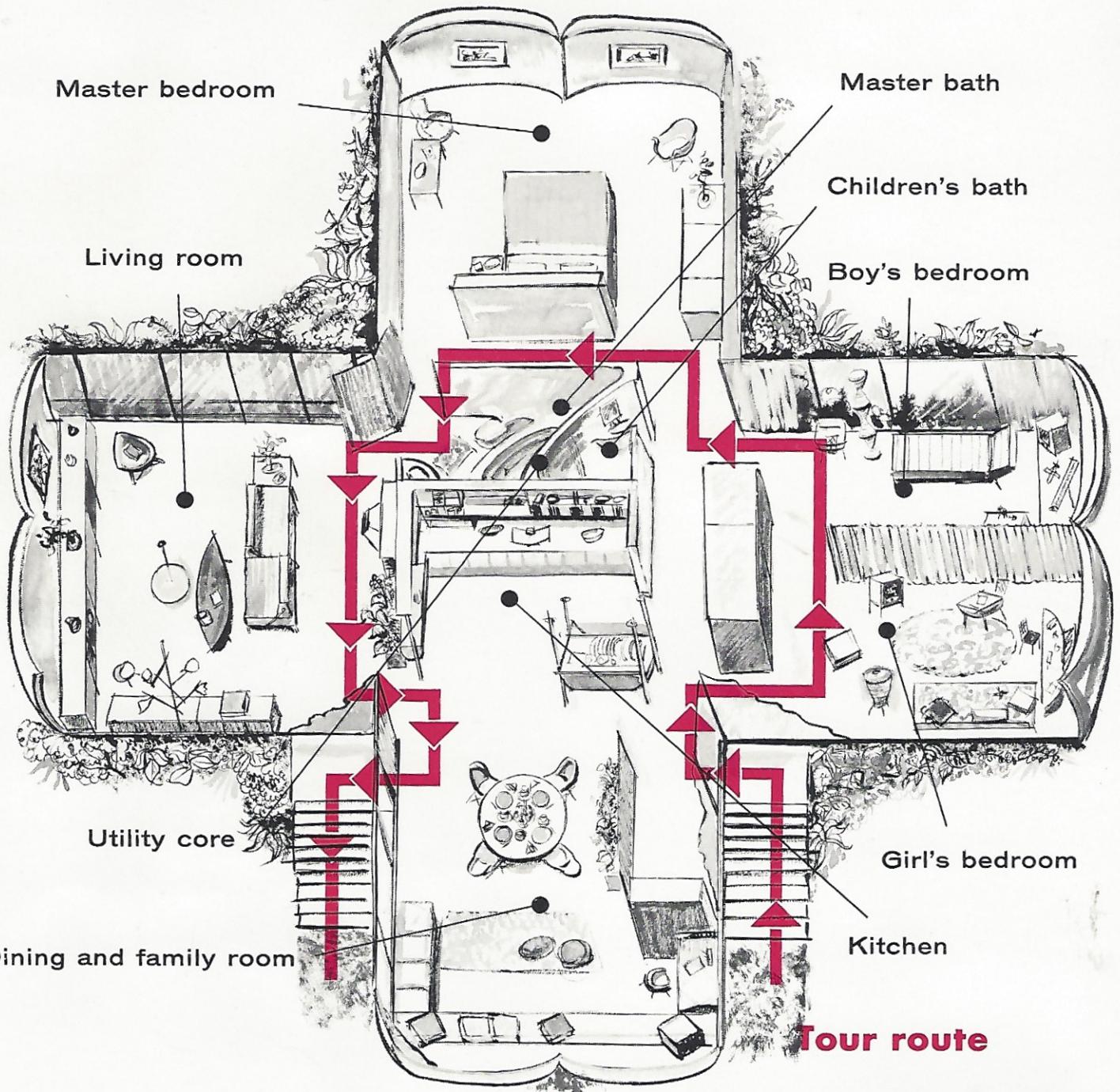
M A G A Z I N E

SUMMER 1957

Monsanto's House of the Future:
Plastics used boldly, creatively
as building materials
Page 1



A good balance of beauty and function





All-plastic molded home dramatically emphasizes not only beauty and flexibility of product but also its strength as a structural

material. Despite fragile appearance, house is sturdy. Cantilevered modules are able to support over 13 tons — twice design loads.

*Plastics are used boldly, creatively
as building materials in Monsanto's*

House of the Future

DISNEYLAND

MONSANTO'S PLASTIC HOUSE looks serene amid its landscaping here. Its white, cantilevered wings make cloud reflections in the quiet pool at its base. It looks as though it suited its hillside setting or could fade nicely into a flat plot in the Midwest, or a rocky one in New England, or among the jack pines and live oaks of South Carolina.

The thousands of people who visited the House of the Future since it opened its doors earlier this summer would find it hard to believe that here is the house that lack-of-information built.

The whole project goes back four years. At the time it was common knowledge in the industry that plastics had a small but well established beachhead in the



Decor, features of family food center were coordinated by design to fit open plan of house. Appliances disappear at touch of button when not in use. Polarized light ceiling eliminates shadows.

construction field. The applications were confined mostly to functional and decorative purposes. It was quite clear that the beachhead could be expanded almost indefinitely if the plastics and the building industries could ever arrive at a common ground of understanding of each other's problems.

Monsanto, with a frank eye on new markets for its chemicals and plastics, and some healthy inquisitiveness about what plastics could or could not do for construction, asked architects at the Massachusetts Institute of Technology to do a study of plastics in housing. In the back of everyone's mind was the thought that some day the design for a plastic house might come out of this.

In 1955 a study titled "Plastics in Housing" emerged. It was an encouraging and fascinating document.

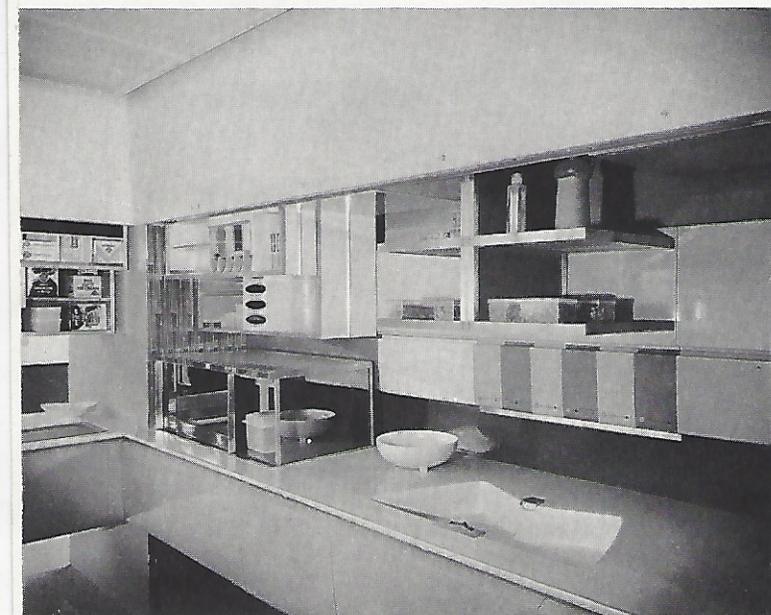
At this point Monsanto's Plastics Division took a deep breath and decided that a full blown construction program was the only way to break the bottleneck on performance data and show builders, architects and the public in tangible fashion what plastics could do.

Meanwhile, Monsanto joined with MIT in a tele-

A kitchen that doesn't look like one

Sink is integral part of one-piece plastic counter. Range permits microwave cooking of various foods at same time. Three cold zones handle frozen, normal, irradiated foods. Raising shelves, lowering oven changes appearance of area.

"Island" houses desk, communications center, garbage disposer, work surface, ultra-sonic dishwasher. Sound vibrations in water remove sticky food particles. Plumbing, electrical connections are in plastic supports.



Girl's room shows versatility of man-made fibers, plastics. Flooring and folding room divider contain vinyl. Frame of vanity chair is vinyl-dipped. Gay rug is of Acrilan, same acrylic fiber used in material covering bolsters and mattress which, in turn, are of urethane foam (also used as rug underlay and to insulate walls). Drapes are nylon; floating desk lamp is suspended from nylon threads.



Filling the needs of growing children

Furnishings in boy's room include floor to ceiling "column of light" and child-proof melamine plastic desk and chair. Folding room

divider allows privacy at night, sizable play area by day. Plastics are especially adapted for abuse children give furniture.



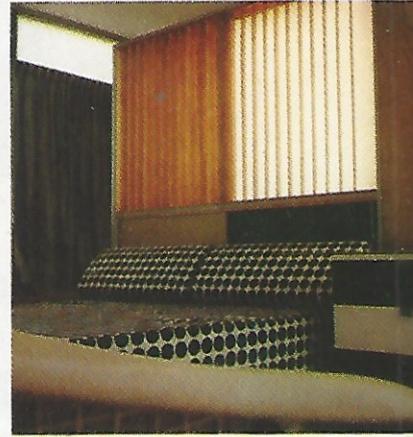


Vanity, with built-in lavatory, is cut off from rest of master bedroom by location of storage units. Wall covering of Teraise plastic, a Monsanto development, is change from predominance of gray.

Work saving graciousness for a bedroom

High-backed chair has vinyl plastic dipped frame. Glass wall area is 10 times that of many homes; equals floor space.

Illuminated headboard is basic lighting element in room. Adjustable louvers allow one person to sleep, other to read.



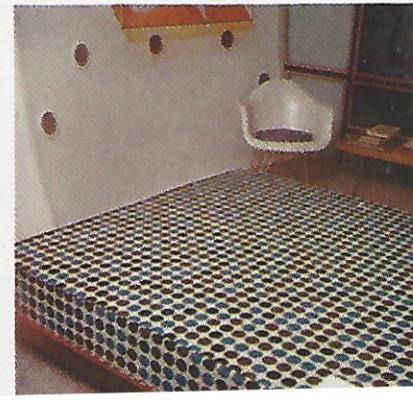
Nylon, Acrilan wardrobe snugles in storage unit of melamine plastic laminate. Drawer is of injection molded styrene.

Lavatory, tub, closet and walls are one-piece plastic unit in both bathrooms. Controls are virtually all electronic.



End table has top, shelf of Saflex decorative safety glass. Special latex paints were developed for plastic surfaces.

Bed has mattress, pillows of vinyl foam. Grilles are vents for air distribution system which both heats and cools rooms.



Wipe-off and wash-down qualities of plastics make use of large areas of white practical not only for living room walls but furnishings as well.



Line of bright-hued cabinet doors hides Hi-Fi, TV, speaker, tape recorder unit.



For family living — a blend of brilliant colors, openness and plain old comfort

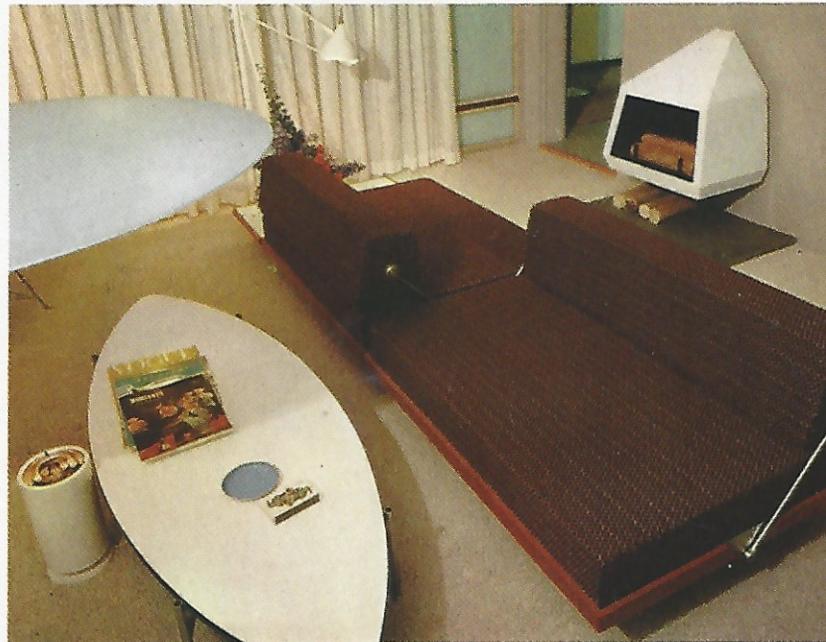
scoped research program—one in which design, engineering and testing could go along almost simultaneously. This has since become a continuing program.

Eventually the Monsanto-MIT team came up with a bold design for a molded plastic house which offered some startling new approaches to the philosophy of housing for Americans. It also offered some tempting glimpses into the future of plastics.

The decision to actually build a house involved no small responsibility and no small cash outlay. Feeling it was the better part of wisdom to keep an eye on the basic objective—plastics in housing—Monsanto invited a cross section of housing industry suppliers to take a long look into their respective futures and translate what they saw into reality. Construction started in January 1957 at Disneyland. The house was opened to the public in June.

Some of the innovations in the house, pictured on these pages, may not be commercially available for years. But in the meantime, like the special applications of plastics in the House of the Future, these imaginative new electronic and mechanical aids to man's health,

Fireplace, flip-flop bolsters on sofa add to room's warmth. Mobile dome reflects floor projector light, illuminating area desired.





Feel of informal elegance is achieved in family room. Vinyl floor has square nugget-sized chips of dull-

lustre gold, warm and cool grays embedded in field of ivory. Modular bench has urethane foam cushions.



For extra leisure time an informal, open area for dining

convenience and pleasure can be market- and engineer-researched from every angle. In one bold leap, Monsanto and its cooperating partners* feel, design and engineering temporarily have gone ahead, rather than merely kept

Coffee table with *Saflex* decorative safety glass top is one of many furnishings in house using this new product.

Colorful screen of *Saflex* decorative safety glass is multi-purpose. Besides controlling traffic from main entrance, it screens dining area from outdoors, adds warmth.

*American Motors Corp., Kelvinator Division, kitchen, clothes washer, dryer; Armstrong Cork Co., floor covering; Bell Telephone System, new telephone designs and equipment; Chemstrand Corporation, carpets, clothing, upholstery, draperies; Crane Company, bathrooms, air conditioning, heating; Libbey-Owens-Ford Glass Co., Thermopane windows, interior glass partitions; Mobay Chemical Co., urethane foam for insulation, furniture; National Lead Co., interior and exterior paints; Owens-Corning Fiberglas Corp., glass cloth for exterior, interior reinforced plastic structural shapes; Sylvania Electric Products, Inc., interior lighting, TV, radios and phonograph; U. S. Time Co., watches, clocks; Yale & Towne Mfg. Co., locks and hardware.



Chemical Materials in the House

Listed below are generic terms and trade names of materials produced by Monsanto and its associate companies.

TRADE NAMES	GENERIC	TRADE NAMES	GENERIC
<i>POLYFLEX</i>	styrene film and sheets	<i>LUSTREX</i>	styrene
<i>RESINOX</i>	phenolic and resorcinol resins	<i>LYTRON</i>	expandable styrene
<i>RESIMENE</i>	melamine and urea formaldehyde resins	Monsanto polyethylene	styrene paint binders
<i>SCRIPTITE</i>	melamine, urea and styrene paper finishes	<i>VUEPAK</i>	polyethylene
<i>RESLOOM</i>	melamine and urea textile finishes	<i>OPALON</i>	cellulose acetate
<i>STYMER</i>	vinyl and styrene textile sizes	<i>ULTRON</i>	vinyl chloride resins
<i>LAUXITE</i>	urea and melamine adhesives	<i>NITRON</i>	vinyl chloride foam
<i>LAUXELN</i>	casein and soybean adhesives	<i>SAFLEX</i>	vinyl films and sheets
<i>REZ</i>	bisphenol A (epoxy resins)		cellulose nitrate
	wood sealer and primer	<i>ACRILAN</i>	vinyl butyral film
	maleic and phthalic anhydrides (polyester resins)		urethane foams (Mobay)
<i>GELVATEX</i>	polyvinyl acetate base paint (Shawinigan)		acrylic fibers (Chemstrand)
	asphalt paving material	Chemstrand nylon	nylon fibers
		<i>NOKORODE</i>	asphalt primers and sealers
		<i>TERAISE</i>	styrene wall covering
			styrene monomer (polyester resins)

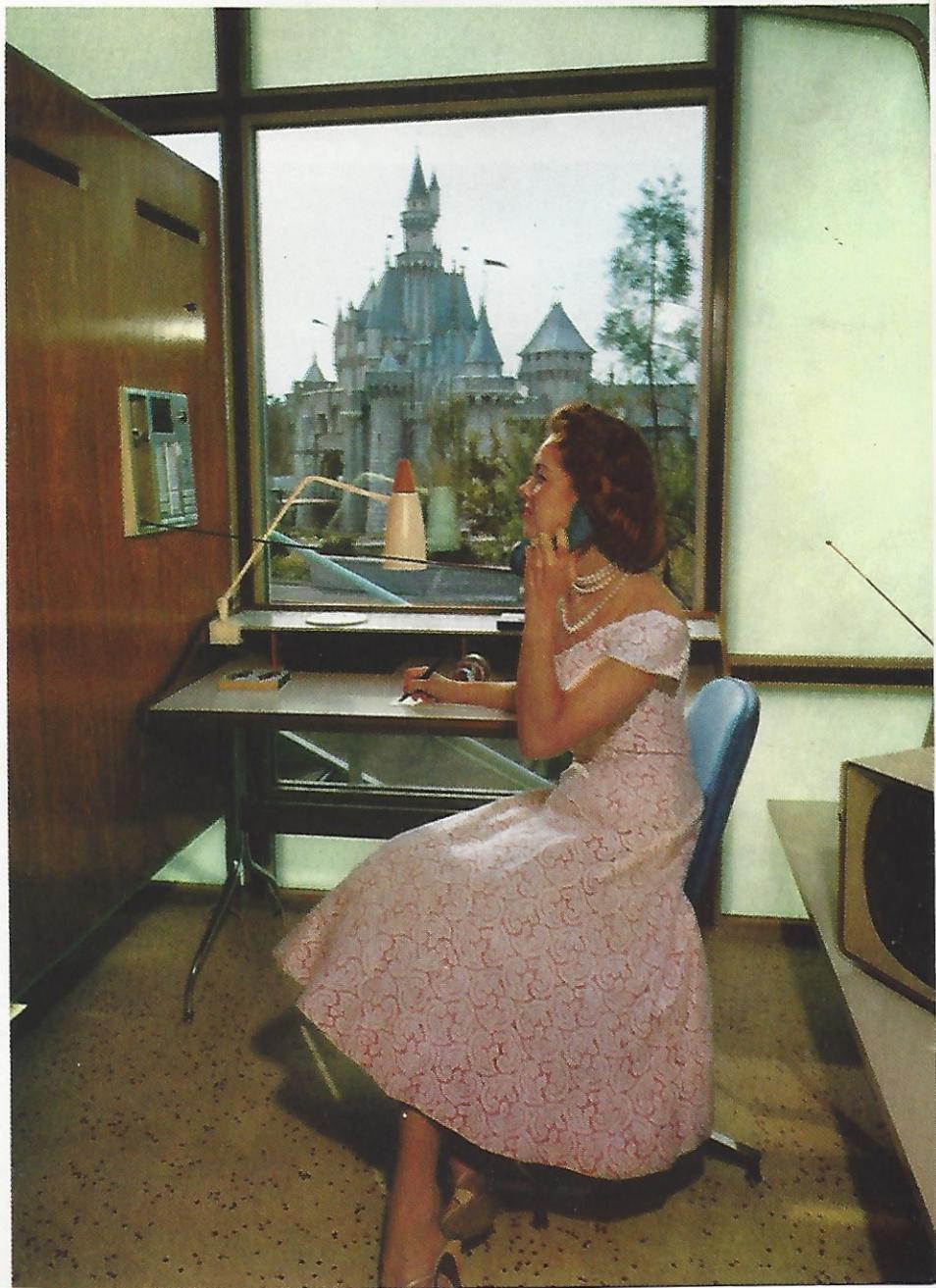


This view shows airy openness sought in designing home. Dual overhead light fixture can be used either to "spot" table or for general illumination of room. Chairs are upholstered in vinyl.

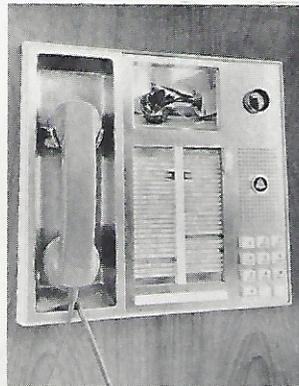
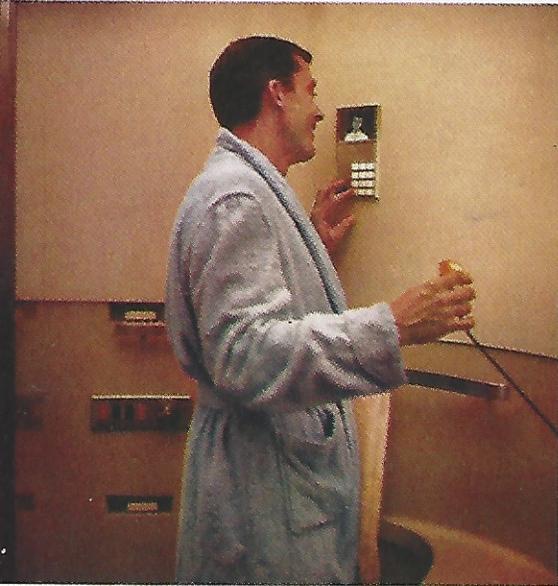
and loafing



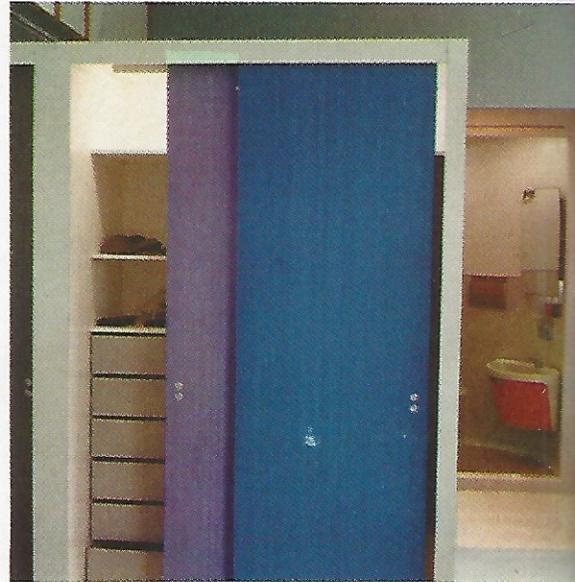
Family room has secluded nook for "homework." Swaged leg desk, swivel chair are of melamine laminate and walnut. Phone has front door answering unit.



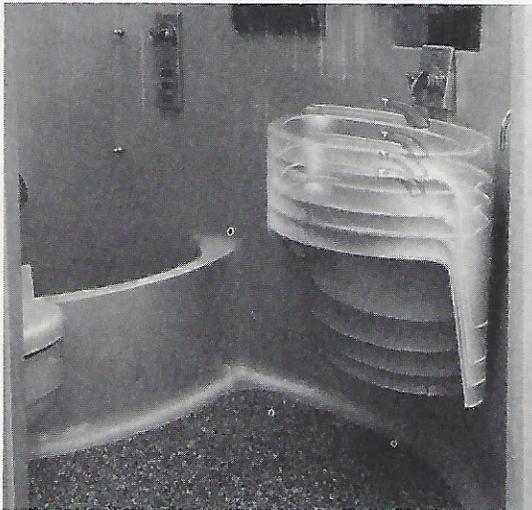
And many fascinating details



Pushbuttons replace telephone dial. Screens permit user to see party on line or callers at door. Repertory dialing simplifies reaching, remembering frequently called numbers.



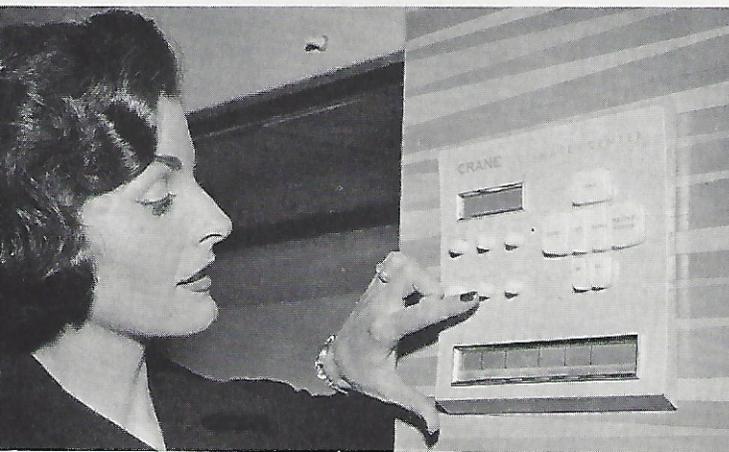
Storage unit in boy's room is of melamine plastic laminate with a colorful door covering of Teraise plastic.



Adjustable electronic mount solves old problem of lavatory that always seems just out of reach of young hands.

Climate control center regulates individual room temperature and humidity, purifies air, eliminates undesirable odors and adds scent of pine, leaves, sea air or flowers.

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the traditional two paces behind the housing needs and desires of Americans.

The House of the Future isn't Monsanto's only club in the bag when it comes to plastics-in-building research. At St. Louis early this spring the company's Inorganic Chemicals Division opened a large laboratory building which is doubling as a proving ground for plastics. Plastics, for example, face the building blocks and structural panels on the exterior, are being used as pipes, drawer liners, walls, ceilings, floors and even in some new, highly efficient vent fans indoors.

The gentle compound curves of the House of the Future and the glazed turquoise face of the new St. Louis laboratory represent the best use of plastics technology for the moment. Both were designed to stimulate creative thought among builders, architects and the plastics industry—and to feed back a continual stream of practical information. Research years are telescoped very quickly into months in this fashion.

The Co-operators

AMERICAN MOTORS CORP.—KELVINATOR DIVISION, 14250 Plymouth Road, Detroit, Mich., kitchen, clothes washer and dryer.

ARMSTRONG CORK COMPANY, Lancaster, Pa., vinyl foam backed floor covering and various acoustical materials.

BELL TELEPHONE SYSTEM, 195 Broadway, New York, N. Y., new telephone designs, push-button dialing, picturephones and "hands-free telephones."

CHEMSTRAND CORPORATION, Decatur, Ala., upholstery, draperies, rugs, linens and clothing.

CRANE COMPANY, 836 S. Michigan Ave., Chicago 5, Ill., two molded modular bathrooms, air conditioning and heating.

LIBBEY-OWENS-FORD GLASS CO., 608 Madison Ave., Toledo 3, Ohio, Thermopane glazing, decorative *Saflex* patterns for windows, interior partitions and tables.

MOBAY CHEMICAL COMPANY, 1901 S. Second St., St. Louis 4, Mo., urethane foam for structural requirements, insulation and furniture.

NATIONAL LEAD COMPANY, 111 Broadway, New York, N. Y., interior and exterior paints.

OWENS-CORNING FIBERGLAS CORP. — TEXTILE PRODUCTS DIVISION, 598 Madison Ave., New York 22, N. Y., glass cloth for exterior and interior fiberglass reinforced-plastic structural shapes.

SYLVANIA ELECTRIC PRODUCTS INC., 1740 Broadway, New York 19, N. Y., interior lighting, including polarized light ceiling for kitchen and bathroom, radios, TV, phonograph.

U. S. TIME COMPANY, 500 Fifth Ave., New York, N. Y., wireless clock.

YALE & TOWNE MFG. CO., 11 South Broadway, White Plains, N. Y., locks and hardware including remote control lock for entrance door.

The Suppliers

Bolta Division of General Tire Co., vinyl foam.

Douglas Aircraft Co., Inc., phenolic honeycomb.

Herman Miller Furniture Co., plastic furniture.

Heywood-Wakefield Co., plastic furniture.

Monsanto Chemical Company Research and Engineering Division, wall covering of *TERAISE*.

New Castle Products, folding partition.

Philco Corporation, stereophonic equipment.

Pioneer Plastics Co., laminated plastic surfaces.

Pittsburgh Plate Glass Co., polyester resins.

Prolon Plastics, Division of Pro-phy-lac-tic Brush Co., styrene furniture drawers and melamine dinnerware.

Revell Inc., model train and airplane.

J. G. Roy Lumber Co., wood laminates.

Shell Chemical Co., epoxy resins.

The Barash Co., Division of U. S. Plywood, vinyl wall covering.

Tube-Turns Plastics, Inc., plastic pipe.

Tupper Corporation, Tupperware polyethylene food storage and cooking containers.

Winner Manufacturing Co., structural plastic parts.

For detailed information write to

Monsanto Chemical Company, Plastics Division, Room 264, Springfield 2, Mass.



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