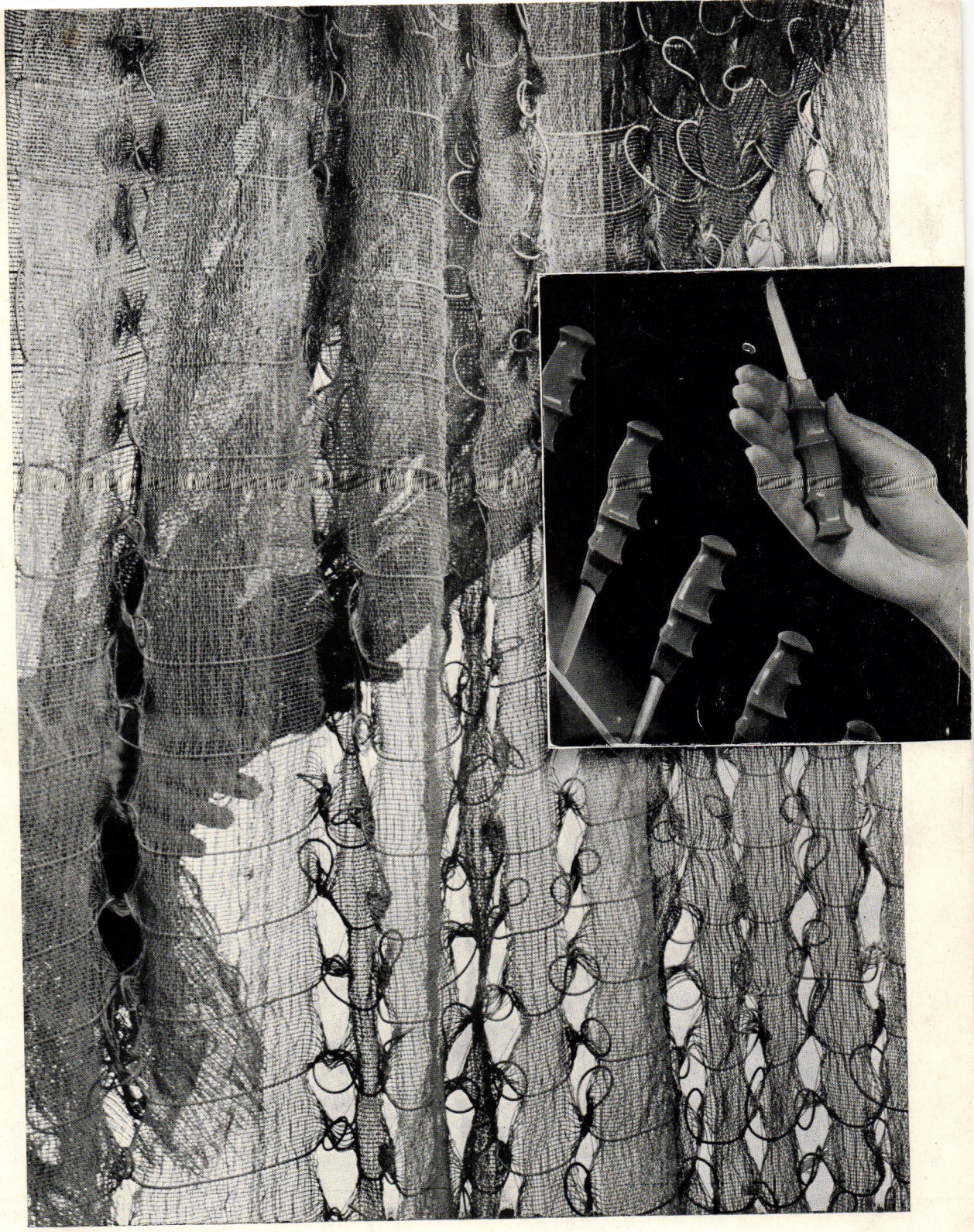


# EVERYDAY ART QUARTERLY

## A GUIDE TO WELL DESIGNED PRODUCTS

**WINTER '47/8**
**No. 6 / 20c**

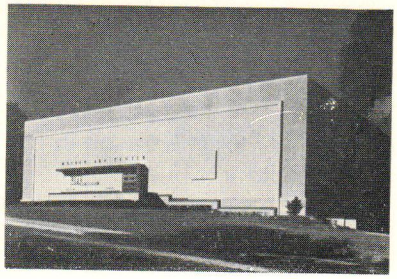
PLASTICS IN THE HOME

**WALKER ART CENTER • MINNEAPOLIS**

## ON THE COVER:

Experimental drapery fabric woven of Koroseal filaments by Henning Watterston. Photo by Imogen Cunningham.

Tenite paring knife handles provide a good gripping surface for righthanded cooks. Handles are molded with finger and thumb impressions of the right hand. *Fin-Grip* paring knives made by Nu-Products, Inc.



**THE WALKER ART CENTER**

is a progressive museum of the arts.

The objective of the Center is to give men, women and children an opportunity to know, enjoy and use the arts — to clarify the relationship of all art to our modern lives — to be useful by reporting, explaining, teaching the value of art to those who need or want this knowledge — to share with the schools and libraries in broadening the cultural opportunities in America.

# EVERYDAY ART QUARTERLY

## A GUIDE TO WELL DESIGNED PRODUCTS

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in the SPRING issue:
USEFUL GIFTS
MODERN JEWELRY


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Staff Photographer: ROLPHE DAUPHIN

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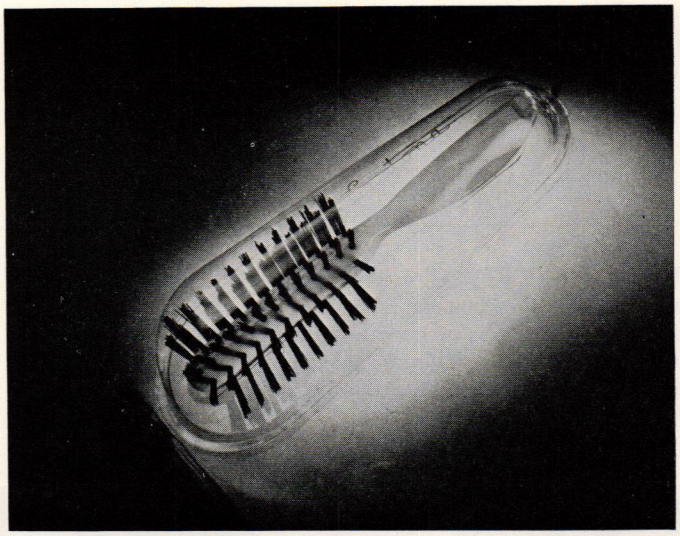
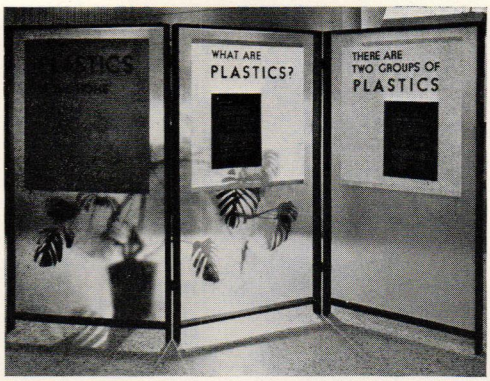
# WHAT ARE PLASTICS?



Charles McKinney

Three kinds of plastics are used here for one product: Lucite for the brush back; nylon for the bristles; sheet acetate for the package. Designed by Barnes & Reinecke for Lactona.




From the exhibition PLASTICS IN THE HOME shown in the Everyday Art Gallery in the summer of 1947. This screen was used at the entrance of the exhibition; it is covered with translucent Glassette, made by Endurette Corporation. Synskin and Synweb, fiberglass and plastic sheets from Polyplastex United, are used for the signs.

The exhibition PLASTICS IN THE HOME was assembled and designed by the Walker Art Center.

As an adjective, *plastic* means: capable of being shaped or molded.

The same word *plastic*, when used as a noun, designates a general category of materials such as *wood* or *metal.*

The materials within each of these groups have many similarities, but they also have definite individual physical and chemical properties. High carbon steels are strong, but usually brittle; copper is soft, but has good electrical conductivity; chromium is hard, but has good corrosion resistance. Likewise, certain plastics have high strength, but are brittle; some have excellent electrical resistance, some have good chemical resistance, while others cannot even stand the effect of boiling water.

Plastics consist mainly of organic substances of large molecular weight; they can be shaped or molded while in a heat-softened condition.

Each one of the plastics can be modified by changes in its ingredients or in the method of its manufacture. The properties of a plastic—such as stiffness, pliability, strength, heat resistance, transparency, resistance to chemicals—can be varied at will to suit the end purpose for which it is to be used.

**PLASTICS ARE NOT SUBSTITUTES. They should not be used where another material can do the job better. They should be used only where their special properties make them superior to other materials.**

# THERE ARE TWO GROUPS OF PLASTICS

**Plastics are divided into two general types: thermo-plastic and thermo-setting materials. (*Thermo-* is derived from the Greek word meaning *heat.*)**

**THERMO-PLASTIC** materials, when subjected to heat or pressure, do not undergo any chemical change. Similar to metals, they can be re-heated and re-shaped many times. They remain soft as long as they remain hot; they can be bent and twisted while in a heat-softened condition. They regain their stiffness and hardness by cooling.

Thermo-plastic materials in general use include:

CELLULOSE NITRATES
CELLULOSE ACETATES
POLYSTYRENES
POLYETHYLENES
ACRYLIC RESINS
VINYL RESINS
POLYAMIDES

see pages 7, 8, and 9

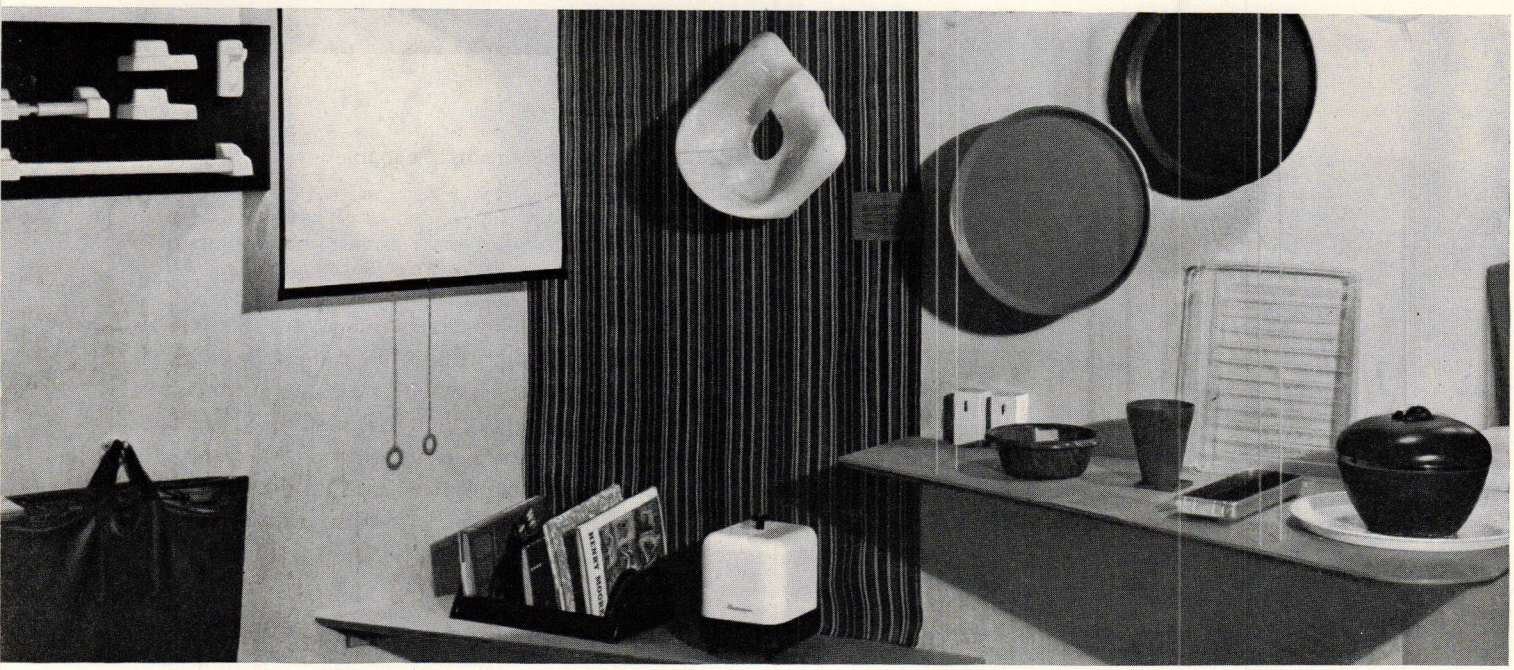
---

**THERMO-SETTING** materials also become softened by heat; but if the heating is continued they become permanently hardened by a chemical change. After they are set or *cured*, any alteration to the shape of objects made of thermo-setting materials can only be accomplished by machining.

Thermo-setting materials in general use include:

PHENOLIC RESINS
UREA RESINS
MELAMINE RESINS

see pages 5 and 6



A section of the exhibition PLASTICS IN THE HOME. From left to right: *Lustroware* bathroom accessories by Columbus Plastic Products; insulated picnic bag from Refrig-O-Bag Co.; *Vimlite* windowshade by Plastishade; striped upholstery fabric woven of Saran by Chicopee; *Lit'l Tyke* trainer molded of Tenite by Higginbotham & Co.; bookrack molded of Resinox by Waterbury Companies; *Electrosteem* bottle sterilizer with bakelite base from Electric Steam Radiator Co.; set of three urea trays by Eclipse Molded Products; Catalin strainer; Lumarith flower pot from Sioux Falls Plastics; polystyrene refrigerator tray by Erie Resistor Corp.; *Lady Fairfax* aluminum icecube tray with Tenite dividers by Fairfax Engineering Co.; *Sav-Ice* laminated ice bucket from Rodic Rubber Corporation.*

## RECOMMENDED READING

*The following two pamphlets contain excellent outlines of the field of plastics, including detailed bibliographies. We recommend them as basic reading on the subject.*

**Plastics, the Story of an Industry**

*Prepared under the direction of the Committee on Plastics Education of the Society of the Plastics Industry, Inc., 295 Madison Avenue, New York 17, N. Y.*

**Plastics**

*Prepared by the American Association of School Administrators. Obtainable from Public Relations Department, E. I. duPont de Nemours & Co., 626 Schuyler Avenue, Arlington, N. J.*

* *Note: All addresses of designers and manufacturers mentioned in this issue are listed on page 16.*

## FABRICATION OF PLASTICS

The basic natural substances used in the making of plastics are:

COAL, AIR, LIME, WATER, PETROLEUM, CELLULOSE, SULFUR, SALT.

Synthetic plastics are made by a process known as POLYMERIZATION.

This is a chemical process in which a substance is changed (by union of two or more molecules of the same kind) into another compound having the same elements in the same proportions, but a higher molecular weight and different physical properties.

Plastics Materials Suppliers, in most cases large chemical manufacturing companies, produce plastics in the form of sheets, rods, tubes, molding powders or granules, and liquids.

These products are sold to Fabricators, Molders, or Laminators who convert them into finished articles. Some of the methods used in the manufacture of plastic articles are outlined below:

**Compression Molding**

This method is suitable both for thermo-plastic and for thermo-setting materials. Powdered molding compound is placed in a heated steel mold which is then subjected to hydraulic pressure.

If a thermo-plastic is used, the mold must be chilled while still under pressure, whereas thermo-setting materials are left in the hot mold to cure and the molded article is taken out while hot.

**Injection Molding**

This process is most generally used for thermo-plastic materials in the production of rather small articles.

Granular compound is heated and forced under high pressure into cold molds. By this method, quantities of small objects can be molded at a single *shot*. Production is very fast because the plastic sets almost instantly in the cold molds.

**Extrusion Molding**

Strips, tubes, rods, filaments, and sheets are fabricated by *continuous extrusion*. The heated compound in viscous state is forced through a die of the desired shape, is air cooled, and cut into sections.

**Casting**

Casting is used mostly for phenolic resins. The melted material is poured into open lead or rubber molds and is cured slowly at medium temperatures.

**Forming, Drawing and Blowing**

Forming is applied to thermo-plastic sheets or rods. The material is heated to the point where it begins to soften; it is then pressed or bent into the desired shape and allowed to cool.

Drawing is the process of stretching softened sheets of thermo-plastic material over a mold. In blowing, thermo-plastic sheets are placed inside closed molds and forced into shape by air or steam pressure.

**Laminating**

In the making of laminated plastics, layers or plies of material such as cloth, paper, wood, or glass fibers are coated with uncured resin and pressed together. There are several kinds of lamination, differing according to the amount of pressure used.

**Machining**

All machining operations that are used on wood or stone can be applied to plastics, such as sawing, drilling, grinding, stamping, carving, turning, polishing, etc.

# DESIGN IN PLASTICS

**by Donald A. Wallance***

As long ago as 1865, one of the early pioneers in the development of synthetic plastic materials described the new material he had produced in his chemical laboratory as a "substance partaking of the properties of ivory, tortoise shell, horn, hardwood, india rubber, gutta-percha, etc., and which will to a considerable extent replace such materials." This limited view of plastics, in terms of other materials, persisted for some time. In recent years, however, plastics have come into their own, not merely as satisfactory substitutes for other materials, but as new materials possessing unique and distinctive characteristics.

No other materials offer such an extraordinary range of possibilities. The magic of industrial chemistry can create a polyethylene bowl whose delicate, translucent walls yield to the slightest finger pressure, or tough laminated plastic armor plate which stops a 45-caliber bullet. Plastics can easily be formed into shapes of unlimited variety and intricacy. Textured or polished surfaces can be obtained without expensive machining, buffing or polishing. Nearly every color of the palette can be produced in plastics with brilliant clarity and in every degree of transparency.

With such diverse possibilities at his disposal, the imagination of the designer is free to run riot—and sometimes does. Good design does not necessarily follow from sleek surfaces, transparent materials, strident color, heavy ornament or bulbous forms. These attributes may endow an object with temporary "shelf appeal" but objects which retain their freshness with familiarity and use depend on more intrinsic qualities of design.

Plastic objects are characteristic products of modern machine production. As such, they provide good illustrations of the nature of design for machine production as distinguished from design for handicraft production.

The form of a well-designed object is expressive of its purpose, material and structure. Its shape and outline are agreeable to eye and hand. In a well-designed object, texture, ornament and color are integrated with and subordinated to form.

*Little Drip* one-cup coffee maker demonstrates the application of several materials to one product, each material used where its special properties are most desirable. The coffee compartment into which the boiling water is poured is made of aluminum; the drinking cup is of glass; the holder and cover of polystyrene plastic. Made by George S. Thompson Corp.

The form of plastic objects is conditioned by the nature of the material and the production process. The most common method of production is die molding, generally an automatic or semi-automatic process in which the plastic material, while in a viscous state, is

continued next page

* Donald A. Wallance practises industrial design in Washington, D. C., and is design consultant for the Office of the Quartermaster General.

molded under high pressure in steel dies. Products made in this way range from the common electric plug to the plastic molded radio cabinet. In order to increase strength, and also to facilitate molding, sharp edges and corners are generally eliminated, imparting a rather fluid character to the form of most plastic objects. Aside from such considerations, however, there are practically no limits on the variety or intricacy possible in molded shapes. The molding process can produce with equal facility, a simple box-like shape whose edges may be rounded for technical reasons, or a more fluid shape of continuously curved surfaces. When these possibilities are skillfully exploited by the designer, the most common utilitarian objects may be endowed with grace and sensuous beauty. When mis-used, as is all too often the case, the same possibilities can result in bulbous or indiscriminately streamlined shapes which have no relationship to the nature of the item. Examples of such abuse of the form possibilities of plastic materials can be seen in radio cabinets whose ends are bulged out for no apparent reason, or ice cube crushers which look like V-2 rockets poised for a vertical takeoff.

### Ornament and color

Ornament may enhance the design of an object, when integrated with and subordinated to form. In the case of molded plastic objects the possibilities for ornamental treatment are technically unlimited. The most intricate patterns can be machined in the mold and readily reproduced. Nevertheless, a beautifully formed object, precisely made and of pleasing texture and color, generally needs little further embellishment. Purity and precision of form are important aspects of the appeal of machine made products. Pure form provides its own ornament derived from the interplay of highlights and shadows, and the gradations of value created by reflected light. In a well-designed object, these provide pleasing, rhythmic patterns of light for the eye to explore.

Ornamental treatment of plastic objects may be desirable in some instances, for relieving a large, flat area, emphasizing a functional aspect of the object, or minimizing the effects of surface marring in use. But the kind of ornament which is appropriate to machine made products is not necessarily the same as that which is appropriate to handicraft products. Skillfully wrought naturalistic or highly intricate ornament which bears the touch of the individual craftsman may be attractive in an individually crafted object, but becomes banal when mechanically reproduced in thousands of identical pieces. Ornament of an abstract or stylized nature is more in keeping with the precise and standardized character of machine made products. But examples of well-designed products embodying such ornament are actually quite rare, for the ornamental repertoire of product designers has not yet progressed beyond the familiar parallel bars which have become the hallmark of industrial design.

Natural materials such as wood, leather and stone are endowed with subtle surface variations of texture, figure and color which have a universal appeal. Attempts are frequently made to obtain a similar effect in plastics by mixing materials of different color so as to achieve a mottled or multicolor striated effect. A current line of plastic bowls exploits these possibilities, in combination with transparent materials, to achieve an interesting and attractive play of color and light, yet without in any way imitating natural materials. More often, however, materials processed in this manner look like poor imitations of marble, mother of pearl or wood (see almost any juke box). In the case of flexible plastic sheeting which is currently being manufactured on a large scale for furniture upholstering, various devices are used to simulate the appearance of leather. The longer one lives with such imitations, the more apparent the fraud becomes. Even modern technology cannot overcome nature's head start of some thousands of millions of years. Why compete?

Color in plastics is an integral part of the material itself, rather than an applied coating or dye. Hence colored plastics can be used in many products, such as kitchen appliances, whose normal exposure to chemical action and abrasion would make applied finishes impractical. The appearance of many plastic products could be improved by the use of more subtle colors, rather than the strong garish hues so commonly associated with plastics.

### Transparency

No property of plastics has appealed so strongly to popular imagination as that of transparency. Nor has any development of modern technology been more thoroughly exploited by exuberant air brush illustrators. Transparent plastics have revolutionized packaging design and created entirely new products such as clear "blisters" providing unobstructed vision for airplane pilots and "light piping" devices for medicine, dentistry and display design. Light weight, ease of fabrication, and resistance to shattering give transparent plastics important advantages over glass. But predictions that they will supersede glass entirely are quite premature. Poor resistance to scratching, as well as high cost, remove plastics from competition with glass in many fields. It is interesting to note, however, that the current Studebaker car uses transparent plastic sheet for its curved rear window.

The products just cited utilize transparent plastics primarily for functional reasons. But transparent plastics have been applied to many products, such as furniture, where transparency is not a functional consideration. Transparent materials enable us to see through and around an object, endowing the object with unique sculptural qualities. These attributes of transparency have been exploited for centuries in blown and molded glassware. They are now being applied to such diverse plastic products as costume jewelry, household accessories, toilet articles and furniture.

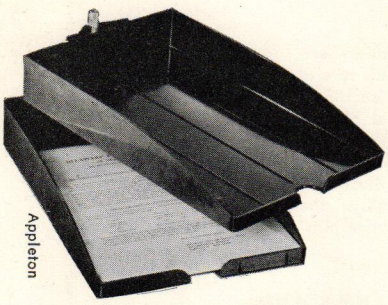
When transparent plastics are applied to large objects of relatively complex structure, such as furniture, some special design problems arise. A table or chair derives much of its design interest from delineation and emphasis of its structure. When transparent structural members are merely substituted for conventional opaque members, the structure of the object tends to dissolve in light. On the other hand, an imaginative use of transparent materials, perhaps in combination with opaque elements, may enhance structure by revealing it more effectively.

### Tactile quality

Most objects of everyday use are touched and handled, as well as looked at. No matter how attractive they may be visually, such objects prove to be unpleasant in use if their surfaces are disagreeable to touch or uncomfortable to handle.

Plastic materials are smooth and warm to the touch, and easily molded into shapes friendly to the hand. These tactile qualities, combined with toughness and resistance to heat, water, and chemicals, make plastics the material par excellence for handles of all kinds. To a large degree plastics are superseding other materials for handles in all sorts of objects from screwdrivers to hair brushes. But these properties are wasted in an object which is poorly designed from a tactile standpoint. A transparent plastic screw-

continued page 15



Appleton

*Rotarian* swinging double-decker desk tray molded of Durez. From Art Steel Sales Corp.

# THERMO-SETTING MATERIALS

*Lifetime Ware* in blue and coral, now available nationally, is an important new development in tableware. Molded of Melmac, the ware has a hard, glossy surface; it is practically unbreakable and may be placed in boiling water without losing its shape. Designed by Jon Hedu for Watertown Mfg. Co.

Leo V. Mooney

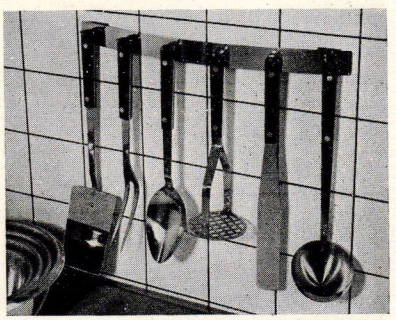
Melmac was first used in this experimental dinner set developed by Russel Wright for American Cyanamid Company. This ware is now undergoing tests in cafeterias and lunchcounters The light weight and toughness of plastic ware is a great advantage in the restaurant field.

*Hemcoware,* inexpensive ware of lighter weight than the other two sets shown on this page, is molded of melamine. Made by Hemco Plastics Division, Bryant Electric Co.

*Sperti* electric iron has U-shaped handle molded of Durez. The broad lower part of the U protects the hand from rising heat. Temperature control knob is embedded in the handle.

Appleton

*Flint* kitchen tools of stainless steel with Bakelite handles are well constructed, extremely simple in design. Designed by M. J. Zimmer and James Chandler of Ekco Products.

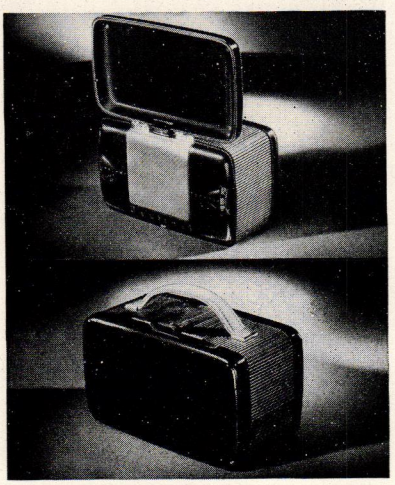


Fintak

*Cafex* aluminum percolator with Durez handle is well shaped, easy to grip. Designed by Peter Muller-Munk for Hartford Products.

Appleton

Small portable radio; the case is molded of phenolic material in black and bright red. The red center band is ribbed for a pleasing texture contrast. Designed by Barnes & Reinecke for Sentinel Radio Corp.



*Co-Ro-Lite* baby stroller molded of rope fiber impregnated with Durez resin. The entire body is made in one piece; it is extremely light but strong and wear resistant. Made by Hedstrom-Union.



## Phenolic Resins

TRADE NAMES:

(molded) Bakelite *Bakelite Corporation*
Durez *Durez Plastics & Chemicals, Inc.*
Resinox *Monsanto Chemical Co.*
Textolite *General Electric Co.*
and others

(cast) Bakelite *Bakelite Corporation*
Catalin *Catalin Corporation*
Marblette *Marblette Corporation*
and others

Phenolic resins are thermo-setting, synthetic compounds, available as molding materials, laminating varnishes, bonding materials, varnish resins, and casting resins.
Different types of fillers, such as wood flour, chopped fabric, mica, asbestos, and the like, are often added to the molding compounds to achieve various properties in the finished product.

CHARACTERISTICS: (molded) light weight; good surface; color range limited to dark shades; inexpensive; good resistance to water, acids, and mild alkalies. (cast) wide color range; translucent, transparent, or opaque; excellent machining qualities.

TYPICAL HOME USES: (molded) telephones, radio cases, washing machine agitators, utensil handles, vacuum cleaner, nozzles, knobs, pulls, bottle caps. (cast) cutlery handles, clock cases, decorative accessories, games.

## Urea and Melamine Resins

TRADE NAMES:

(Urea) Plaskon *Libby-Owens-Ford Glass Co.*
Beetle *American Cyanamid Co.*

(Melamine) Plaskon Melamine *Libby-Owens-Ford Glass Co.*
Melmac *American Cyanamid Co.*
and others

Urea resins are similar to phenolic resins, but have the advantage of being colorless. By the addition of pigments, any desired color can be produced.
Melamine resins are closely related to the urea resins and serve many of the same purposes. They are superior, however, in their resistance to heat and chemicals and are preferred for molded table ware. They are mostly used with fillers which make the molded products practically unbreakable.

CHARACTERISTICS: Odorless and tasteless; chemically inert; rigid, hard surface; unlimited color range; good resistance to acids and alkalies; good light diffusing properties.

TYPICAL HOME USES: Tumblers and bowls, kitchen utensils, table ware, electric parts, reflector bowls, bottle closures, radio and clock cases.

## Laminates

TRADE NAMES: Formica *Formica Insulation Co.*
Micarta *Westinghouse Electric Corp.*
Phenopreg *Fabricon Products, Inc.*
Textolite *General Electric Co.*
and others

Laminates are sheets of paper or fabric impregnated with phenolic, urea, or melamine resins, and cured under heat and pressure into a unitary structure. For decorative purposes the outer layer may be wood veneer, fabric, or colored paper, protected by a resin surface.
Laminated sheets may be flat or curved; laminated tubing is made by wrapping impregnated sheets in repeated layers around a core. Laminated sheets are many times stronger than solid resin sheets of the same thickness.

CHARACTERISTICS: Extremely hard and durable; noninflammable; shatterproof; non-warping and non-shrinking; wide color range.

TYPICAL HOME USES: Wall paneling, table tops, kitchen counters, push and kick plates, trays.

# THERMO-PLASTIC MATERIALS

## Cellulose Nitrate

TRADE NAMES: Amerith *Celanese Plastics Corp.*
Celluloid *Celanese Plastics Corp.*
Kodaloid *Eastman Kodak Co.*
Pyralin *E.I.duPont de Nemours & Co.*
and others

Cellulose plastics are among the most important thermo-plastic materials. Cellulose Nitrate, also known as Pyroxylin, was the first to be developed.
Cellulose Nitrate is not suitable for molding. It is available in sheets, rods, films, tubes, and emulsions. Its use is restricted by its high inflammability.

CHARACTERISTICS: Tough; water resistant; easy to fabricate and cement; wide color range; color fast; tasteless; flexible; very inflammable.

TYPICAL HOME USES: Knobs, soap dishes, piano keys, cutlery handles, tooth brushes, tool handles, ping-pong balls.

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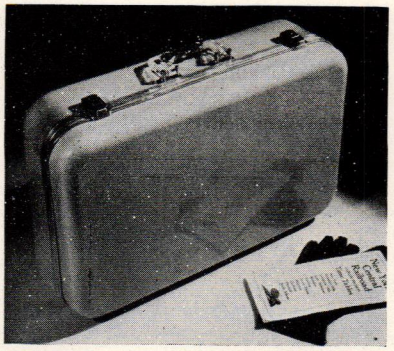
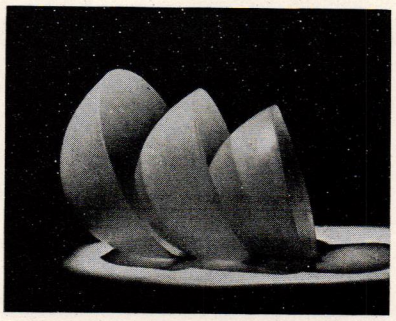
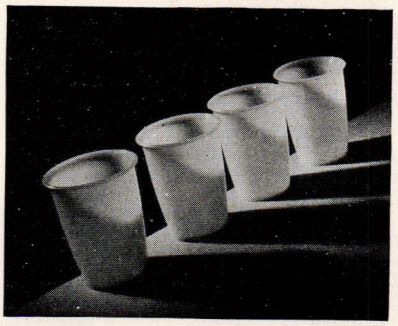


Experimental luggage made of laminates developed by Celanese Corp. Laboratories. Materials used are canvas, Lumarith, and rayon. Handles and hardware for this luggage designed by Morris Sanders.



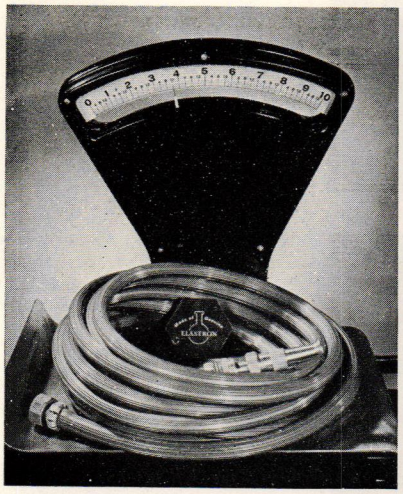
Flexible polyethylene bowls are translucent, impervious to foods and acids, excellent for food storage and serving. Made by Tupper Plastics.

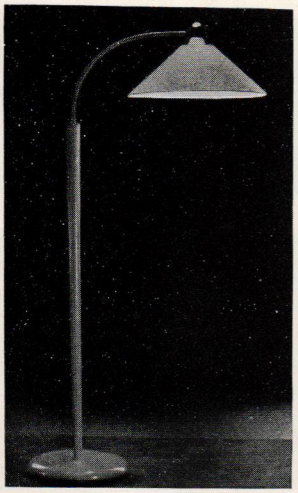


F. M. Demarest

Tumblers molded of nylon are tough, resilient, resist heat better than other thermo-plastics. Molded by Dubois Plastic Products.

Wilcox Studio



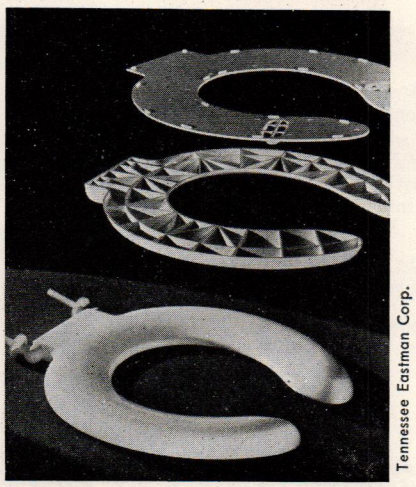


above left:

*Elastron* garden hose is lightweight, flexible, unaffected by changes in temperoture. The material belongs into the vynil resin group. Made by Industrial Synthetics Corp.

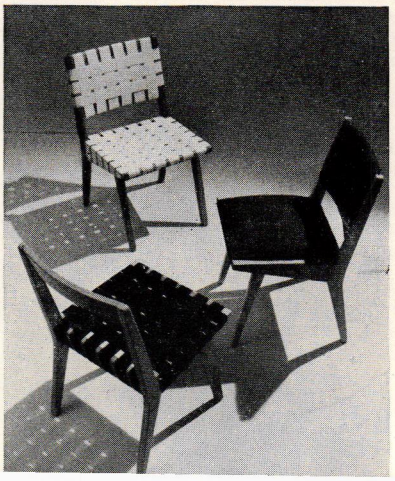
above right:

Shade of Synskin, a new material of Fiberglas impregnated with plastics, made by Polyplastex United, is shown on a floor lamp with flexible arm designed by David Wurster.



Tennessee Eastman Corp.

*Stasco* toilet seats of Tenite are lightweight, tough, and sanitary. A cross section of the molded seat resembles the honey-comb structure of an airplane wing. This design allows a maximum of strength with a minimum of materials. Made by Standard Tank & Seat Co.



Matter

The two chairs at left are covered with webbing woven of Saran thread. Available in many colors, this webbing is very durable and easily cleaned. Chairs from Knoll Associates.

## Cellulose Acetate

TRADE NAMES: Bakelite Cellulose Acetate *Bakelite Corp.*
Fibestos *Monsanto Chemical Co.*
Lumarith *Celanese Plastics Corp.*
Plastacele *E. I. duPont de Nemours & Co.*
Tenite *Tennessee Eastman Corp.*
and others

Cellulose Acetates are among the most widely used thermo-plastic molding compounds. They are produced mainly in the form of granules for injection, compression, and extrusion molding. Sheets, rods, tubes, and continuous film are also available.

CHARACTERISTICS: Strong; good appearance; wide color range; adaptable to inexpensive molding techniques; resistant to salt water and weak acids; light weight; non-inflammable.

TYPICAL HOME USES: Kitchen gadgets, brush handles, containers, hardware, electrical parts, moldings.

## Polystyrene

TRADE NAMES: Bakelite Polystyrene *Bakelite Corp.*
Lustron *Monsanto Chemical Co.*
Styron *Dow Chemical Co.*
and others

Polystyrene is one of the newer plastics; its use as a thermo-plastic molding compound is spreading rapidly because of its excellent properties and comparatively low cost. Polystyrene objects can often be recognized by a typical glassy ring. The material is available in sheets, rods, tubes, molding compounds, and laminating varnishes.

CHARACTERISTICS: Extremely low water absorption; great resistance to chemicals; dimensional stability; odorless and tasteless; great clarity; unlimited color range; strong at low temperatures.

TYPICAL HOME USES: Refrigerator liners and parts, bottles and bottle closures, bowls and plates, boxes, kitchen utensils, toilet tank floats, wall tiles.

## Polyethylene

TRADE NAMES:
Bakelite Polyethylene *Bakelite Corp.*
Dupont Polythene *E. I. duPont de Nemours & Co.*

This is a relatively new material which is translucent and flexible. It can be processed by all the methods employed with the more familiar thermo-plastics: it can be extruded as filament, molded, fabricated into sheets and film, or coated on cloth.

CHARACTERISTICS: Very light weight; low moisture transmission; chemically inert; flexible; tough.

TYPICAL HOME USES: Bowls, bottles, refrigerator storage containers, ice cube trays, shower curtains.

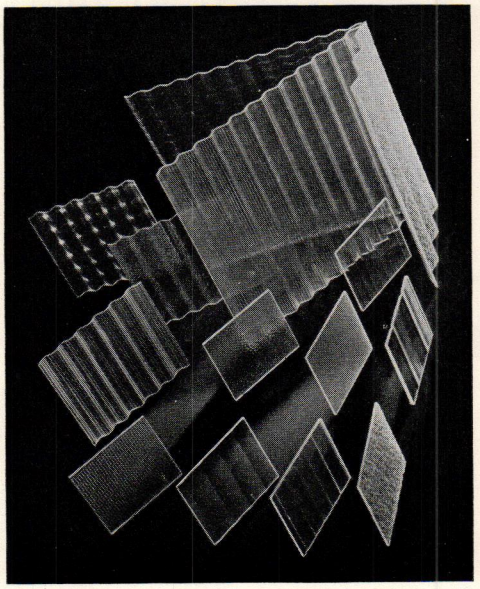
## Acrylic Resins

TRADE NAMES: Lucite *E. I. duPont de Nemours & Co.*
Plexiglas *Rohm & Haas Co.*

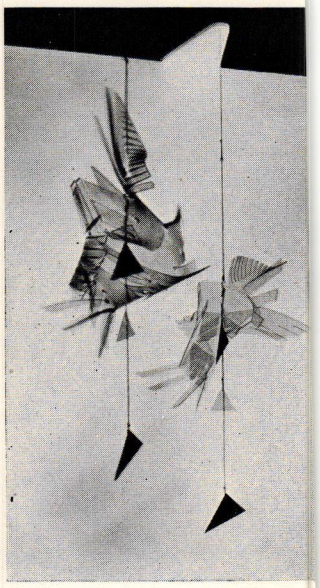
Acrylic resins are available as sheets, rods, tubes, liquids, and molding powders in a wide variety of opaque, transparent, and translucent colors, and in many surface textures. The most remarkable quality of the acrylics is their ability to pick up light and transmit it around bends and curves. Light flows through an acrylic rod as water flows through a pipe. This property is used in the manufacture of surgical instruments as well as for illuminated signs.

CHARACTERISTICS: Light weight; shatter resistant; relatively soft; exceptionally transparent; wide color range; dimensional stability; outstanding appearance.

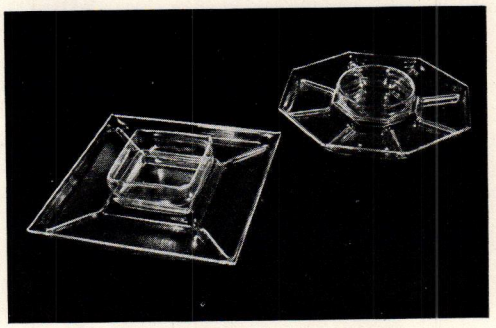
TYPICAL HOME USES: Decorative accessories, lighting fixtures, trays, bowls, boxes, bathroom fittings, drawer pulls, serving utensils, brush backs, screens, windows.



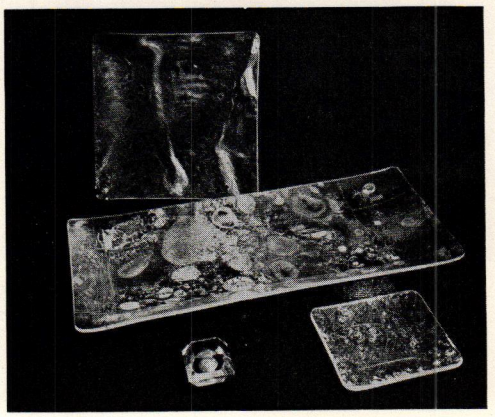
Many variations of corrugated, textured, transparent, and translucent Plexiglas are now available to the designer of plastic products. From Rohm & Haas Co.



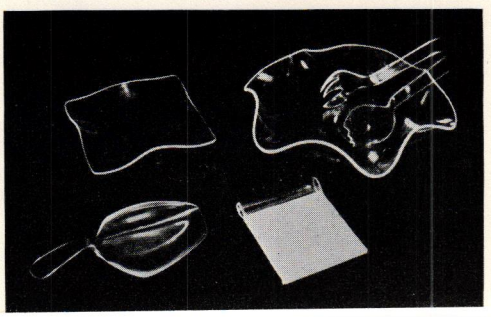
Construction of transparent plast in several colors by James E. Dav Spotlight produces shadows, refle tions and refractions which are e tremely variable so that many entire different effects may be obtained fr the same object simply by varying t methods of illumination or setting t object in motion.



Two hors d'oeuvres trays with re movable inserts designed and mad by C. K. Castaing. Trays are molde of Plexiglas sheets; inserts are mad by blowing.



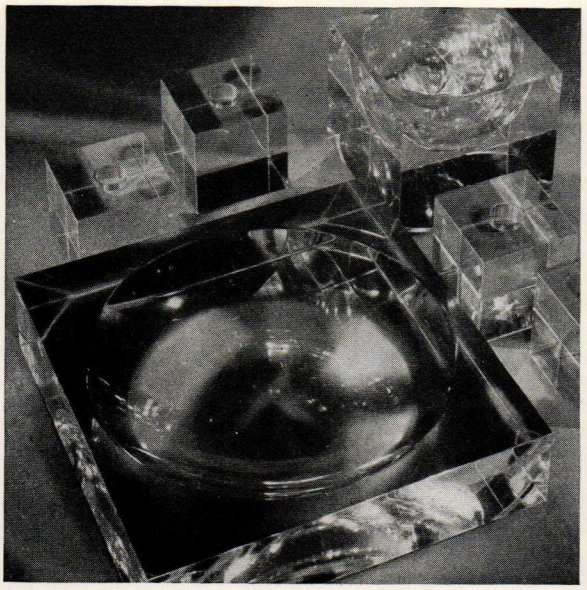
Decorative trays and plates by Fredc Koblick. Air bubbles, bits of wire threads, and sequins between two sheets of Plexiglas form interesting unusual patterns.



Salad bowl and servers, square plate, cake server, note pad holder, all hand shaped from heated Plexiglas sheets by Inez Wood Crimmins.

Hoedt Studios

Sculpture of Plexiglas and chromium wire by the late Laszlo Moholy-Nagy. Light transmitted within the material makes the edges stand out in bold contrast.



Crystal clear bowls and candlesticks are cut from blocks of Plexiglas, bring out the sparkling beauty of the material. Designed by Dorothea Marlor of Rohm & Haas.

*Cloverware* air-blown bowl of green Plexiglas is one item in a line of about 15 pieces of tableware; other colors are amber and translucent white. Designed by Eva Zeisel for Clover Box & Mfg. Co.

Torso by Leo Amino. The use of transparent plastics in sculpture makes it possible to envelop one form completely within another which is transparent, creating new space relationships between contour and internal structure.

## Vinyl Resins

TRADE NAMES: Butacite *E.I. duPont de Nemours & Co.*
Koroseal *B. F. Goodrich Chemical Co.*
Saran *Dow Chemical Co.*
Velon *Firestone Rubber Products Co.*
Vinylite *Bakelite Corp.*
and others

The vinyl resins are among the more recent plastic compounds to attain commercial importance. They are being produced in many variations of their chemical composition and they appear both as rigid and as flexible products.

CHARACTERISTICS: Flexible and rubber-like, or rigid, according to grade; high tensile and tearing strength; inert to oxidation; withstands weathering; non-cracking at low temperatures; resistant to abrasion and chemicals.

TYPICAL HOME USES: Shower curtains, draperies, furniture coverings, garden hose, phonograph records, food bags, floor tile, coatings on rugs, textiles.

## Polyamides (Nylon)

Nylon (made by DuPont) is a generic term, not a trade name. It designates a group of polyamide resins which are similar to natural proteins. There are many different physical forms and different chemical species of nylon.
Nylon is best known as a textile fibre. As a plastic, it is available in the form of molding powders and filaments. Although nylon is thermo-plastic, it softens only at rather high temperatures. This gives articles molded of nylon the ability to hold their shape when subjected to heat.

CHARACTERISTICS: Extreme elasticity; great tensile strength; tough; shatterproof; resistant to chemicals; flexible.

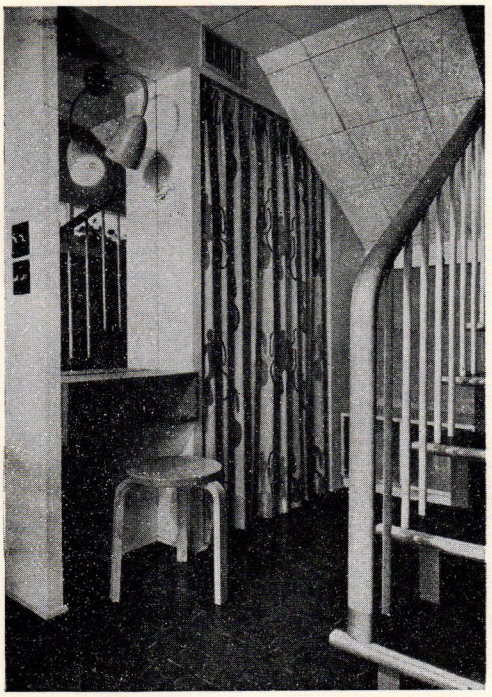
TYPICAL HOME USES: Clothes line, tumblers, dishes, slide fasteners, chair webbing, phonograph parts, bristles. ●

# IDEA HOUSE II

**built by the Walker Art Center**

**sponsored by the Home Institute of the Northwestern National Bank**

**completed September, 1947**



IDEA HOUSE II was presented in great detail in the Fall 1947 issue of Everyday Art Quarterly. Back copies of this issue may be obtained from the Walker Art Center for 30c.

Here we show a few more features of Idea House II to complete the picture.

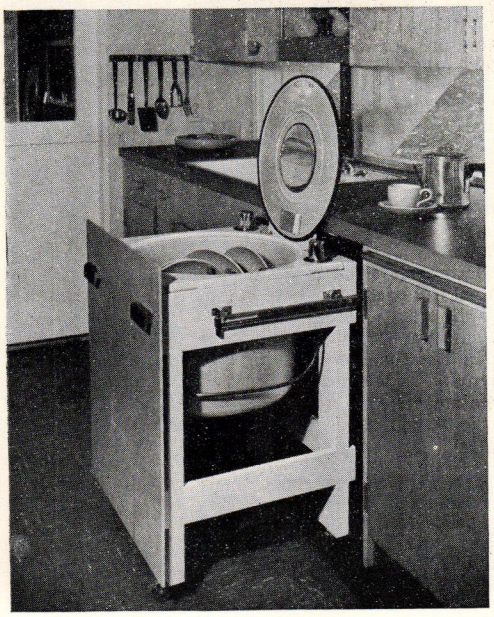
The covered entrance walk at the lower level leads into the entrance hall. It contains a mirrored recess with an adjustable gooseneck light, and a double shelf; and a curtained coat closet. The curtain material, designed by Angelo Testa, is chartreuse printed with red and turquoise figures. The floor is dark green asphalt tile. Nine steps lead up from here to the living room level.

Mirror: *Forman, Ford & Co.*
Versen gooseneck fixture: *Chas. A. Anderson & Co.*
Aalto birch stool: *Baldwin-Kingrey*
Curtain fabric: *Cohn-Hall-Marx Co.*
Asphalt tile: *Insulation Sales Co.*

Ezra Stoller, courtesy McCall's Magazine

The breakfast bar between living room and kitchen is shown in action.

Cabinetwork: *Libbey & Libby Co.*
Roll-down shade: *Holly Manufacturing Co.*
Swedish adjustable chairs: *Knoll Associates*
Swedish brass lighting fixture: *Chas. A. Anderson & Co.*
Portable radio: *Sentinel Corp.*
Roper range: *Minneapolis Gas Light Co.*
Red Wing pottery: *S. Jacobs Co.*



Next to the sink, a Kaiser dishwasher has been installed under the counter. For use, it rolls out on rubber casters. There is no motor, this dishwasher is operated by water pressure only.

Kaiser dishwasher: *Motor Power Equipment Co.*
Flint kitchen tools: *Ekco Products*
Aluminum percolator: *Reynolds Metal Products*

IDEA HOUSE II will be closed during the winter months; it will re-open in the early spring and will be open to the public through the summer of 1948.

IDEA HOUSE II is featured in the January issue of McCall's Magazine and in the February issue of Progressive Architecture.


george nelson
charles eames
zeeland • michigan
herman iller
*
* evans products co., manufacturers

# EVERYDAY ART in the magazines

**Abbreviations:**

AH: AMERICAN HOME, 444 Madison Ave., New York, N. Y.
AF: ARCHITECTURAL FORUM, 350 Fifth Ave., New York, N. Y.
AN: ART NEWS, 136 E. 57, New York, N. Y.
A&A: ARTS & ARCHITECTURE, 3305 Wilshire Blvd., Los Angeles, Calif.
BH&G: BETTER HOMES & GARDENS, 1714 Locust, Des Moines, Ia.
CRep: CONSUMER REPORTS, 17 Union Square, New York, N. Y.
CR: CONSUMERS' RESEARCH, Washington, N. J.
CH: CRAFT HORIZONS, 435 Madison Ave., New York, N. Y.
DES: DESIGN, 131 E. State, Columbus, O.
HB: HOUSE BEAUTIFUL, 572 Madison Ave., New York, N. Y.
H&G: HOUSE AND GARDEN, 420 Lexington Ave., New York, N. Y.
INT: INTERIORS, 11 E. 44, New York, N. Y.
MA: MAGAZINE OF ART, Barr Bldg., Washington, D. C.
PA: PROGRESSIVE ARCHITECTURE, 330 W. 42, New York, N. Y.

## MODERN HOUSES

### East

Carl Koch does a solar house in Massachusetts that is compact, economical, and relies on architectural restraint to conform to its locale. AF Sept.
Edward Stone produces a year-round house on Long Island showing skillful use of available materials, practicable methods. AF Sept.
Robert Montgomery Brown designs an unpretentious large house in Massachusetts. PA Sept.
New Jersey house by Kenneth Kassler uses cinder block and frame construction. PA Sept.
Long Island house by Marcel Breuer features the bi-nuclear plan. A&A Oct.

### Midwest

The Kecks develop a house in Illinois with solar windows, water cooled roof, cavity walls and cellular floors to master a difficult climate. AF Sept.
Schweikher and Elting's country house in Illinois is a frank combination of simple materials, expertly detailed. AF Oct.
Elizabeth & Winston Close build a house on two levels on a wooded hillside in Minneapolis. PA Nov.

### South

Twitchell & Rudolph plan a small house in Florida employing concrete block economically as a structural and finishing material. AF Sept.
Jack P. Coble builds a cypress house in North Carolina. PA Sept.
Hillside house in Virginia by Charles Goodman, formerly a country store, is built to a split level plan. AF Oct.
A house in Oklahoma by Walter and Robert Vahlberg. AH Dec.
Ford & Rogers build a house in Texas that offers maximum comfort despite hot summers and sharp winter cold. AF Sept.
Pavilion in the desert by Raymond Loewy, with Clark & Frey. INT Sept.

### West

Chiarelli & Clark design a house in Washington featuring a 3-spoked plan which opens the view on all sides. AF Sept.
A house on a cliff above San Francisco Bay by Clarence Mayhew. PA Sept.
Raphael Soriano's dexterous handling of steel framing results in a beautifully articulated house. AF Oct.
Walls of glass: a house in Oakland by Frederick Confer. BH&G Dec.
California house: one story, but three bedrooms. By Wm. Kesling. BH&G. Nov.
Gordon Drake completes a modular house in Los Angeles that capitalizes on the area's famous topography, climate, and materials. AF Sept.
Basically a one-room house, the scheme of this hillside hideaway by Gordon Drake is applicable to many sites and climes. INT Sept.
Providing for essentials only: Case Study House No. 11 by J. R. Davidson is small and compact. INT Sept.
Richard Neutra is the architect for Case Study House No. 20. A&A Nov.
Chermayeff, Born & Eckbo build a cliff shelter with many outdoor living areas. INT Sept.
Campbell & Wong imaginatively adapt a Quonset in California. PA Sept.
House on a California Hillside by Michael Goodman. BH&G Oct.
Ski lodge by Wurster, Bernardi & Emmons. H&G Dec.

### Miscellaneous

Ten very small houses. AH Oct.
Houses and apartments in Brazil. AF Nov.
The architect and his community: a case study of Klamath Falls, Oregon, by Sheldon Brumbaugh. PA Oct.
Architecture, family style: two women architects look at today's houses, tell how they affect family life. By Jean Bodman Fletcher and Sarah Harkness. H&G Oct.
How to get twice as much use of your land. HB Nov.
Modular Gardens by James C. Rose. PA Sept. Oct. continued page 14


# A storehouse of New Kitchen Ideas

Our new Kitchen Planning Center is here to help you plan a kitchen to fit *your* needs and *your* wishes. We're happy to render this exclusive personalized service without charge or obligation—whether you're planning a kitchen for your new home or thinking about modernizing your present kitchen.

**HERE'S THE SORT OF HELP WE OFFER:**

—Newest ideas on arranging the kitchen for convenience and efficiency.
—Suggestions on kitchen color schemes and decorations.
—Cooperation with you, your architect, and your builder in working out detailed, individualized plans for your kitchen.
—Information about latest types of kitchen equipment and furnishings, and where they are available.

**Free Consultation** We cordially invite you to visit our Kitchen Planning Center, in the main-floor showroom at Eighth and Marquette. See the full-size New Freedom Gas Kitchen. See the "Kitchen of the Month"—a fascinating doll-house-size model (a new design every month). Look over the interesting reference books and magazines. Have a pleasant and helpful personal chat with our kitchen planning experts, specially trained in kitchen design and decoration.

Come in soon, won't you?

**MINNEAPOLIS GAS LIGHT COMPANY**

Marquette at Eighth

Telephone MAin 5133

### PREFABRICATION

House in "Industry"; a system for the manufacture of industrialized building elements by Konrad Wachsmann and Walter Gropius. A&A Nov.
House in a factory: Consolidated Vultee prefabricated house by Henry Dreyfuss and Edward Barnes. A&A Sept.

### INTERIORS

Little room, but room for everything: a small apartment and furniture by Architects Associated. INT Nov.
San Francisco studio and home of Ruth Gerth and George Kosmak. INT Oct.
What's behind closed doors is the important thing: a well planned kitchen. HB Nov.
This kitchen makes every job easier. BH&G Nov.
Today's laundry is a livable room. H&G Oct.

### FURNITURE, FABRICS, DECORATIVE ACCESSORIES

The shape of things: modern furniture. By Eliot Noyes. CRep Sept.
Saarinen-Swanson Modern. INT Oct. H&G Oct.
$10,000 for the house—how much for the furnishings? BH&G Dec.
Custom built, moderately priced furniture by Pacific Modern. BH&G Oct.
H. G. Knoll furniture. A&A Sept.
The newest furniture: Uni-Dapt. HB Nov.
The new sofas are scale conscious. AH Nov.
In defense of the sitting position. By Jack B. Wallach. AH Oct.
For sale: custom-design furniture by Greta Magnusson Grossman. INT Sept.
Made in California: new furniture by Western designers. INT Sept.
Skilled hands hallmark fine workmanship: Edward Wormley's furniture. CH Nov.
The good word on fabrics: 115 well-woven samples of fine design, strong fiber. INT Nov.
Fabrics by Angelo Testa. A&A Oct.
Selection and care of rugs and carpets. CR Nov.
Modern color prints. CRep Nov.

### INDUSTRIAL DESIGN AND CRAFTS

Museum pieces belong at home: 100 useful objects from Museum of Modern Art show. HB Dec.
A whole magazine issue devoted to plastics. HB Oct.
The shape of things: 16 examples of good design. By Eliot Noyes. CRep Nov.
California crafts. H&G Dec.
Industrial design work by Bartolucci-Waldheim. INT Oct.
The art of pottery: from Paleolithic mud pies to well-designed modern ware. INT Nov.
Pacific Coast pottery in review. DES Oct.
Edwin Scheier, potter. DES Sept.
James Hogan's glass. DES Oct.
Silver plated flatware. CRep Nov.
The shape of things: design of electric heaters. By Eliot Noyes. CRep Oct.
Jewelry by Keith Monroe. A&A Sept.

### CONSTRUCTION AND EQUIPMENT

New housing materials. CRep Sept.
A new way to cut building costs: modular coordination. BH&G Nov.
The case for the flat roof. By Pomerance & Breines. CRep Sept.
Build a home that's safe. By Pomerance & Breines. CRep Oct.
Gifts in home building. CRep Nov.
Is your house all wet: cures for condensation. AH Nov.
Visibility unlimited: about double glazed windows. H&G Oct.
Primer on heating. H&G Nov.
Heating with cold water. CR Nov.
The light side of the American home: about lighting. AH Nov.
30 "best buy" gifts. CRep Nov.
Washing machines. CRep Oct.
Portable washers. CRep Sept.
Portable dishwashers. CRep Sept.
Electric heaters. CRep Oct.
Three electric irons and a steam iron. CR Oct.
Test of six refrigerators. CR Sept.
Table model radios. CRep Oct.
Coffee makers. CR Sept.

**DESIGN IN PLASTICS** continued from page 4

driver handle of cylindrical shape, which is molded with sharp parallel ridges and a flat heel, may be intriguing to look at, but an instrument of torture in use.

### Future developments

Some recent developments in reinforced structural plastics point the way to new opportunities in design. Plastic materials have often been reinforced with substances such as rope fibers, paper sheet or woven fabric in order to increase their strength and toughness. During the war, large objects of high strength and light weight, such as airplane fuselage and wing components, were successfully fabricated with such composite or laminated plastics. More recently these materials have been applied to such objects as boats, luggage, caskets, baby carriages and (experimentally) auto bodies. Architectural and furniture applications have hardly been touched, except for some experimental work. The possibility of forming large plastic shapes of complex curvature and great strength in a single jointless piece is one of the current fields of technological development from which may come new concepts of structure, and exciting new forms for many products.

A number of well-designed plastic products are illustrated in this issue. Most of these are mass produced at prices within the reach of large numbers of people. Yet the design possibilities of plastics have hardly been touched. For plastics are new and untrammelled by tradition, available in a diversity of attractive characteristics, and ideally suited to low cost mass production without compromise of design or quality. ●

# EVERYDAY ART on exhibition

### COLORADO

**Denver Art Museum**
Christmas for contemporaries—good and useful objects for homes, Dec. 4-21
Theatre Arts Exhibition, Jan. 15-Feb. 29

### INDIANA

**John Herron Art Museum,** Indianapolis
Modern American Textiles, Feb. 8-Mar. 14

### MICHIGAN

**Flint Institute of Art**
Craftwork by Cranbrook Students, Jan. 8-Feb. 1

### MINNESOTA

**Walker Art Center,** Minneapolis
Useful Gifts, Nov. 25-Jan. 11
Modern Jewelry, Feb. 15-April 4

### NEW JERSEY

**Newark Museum**
Under Ten Dollars—suggestions for Christmas gifts, Dec. 2-Jan. 11
Newark of the Future—continuous

### NEW YORK

**Brooklyn Museum**
The Artist in Social Communication—greeting cards, Nov. 26-Jan. 4
Art and a Neighborhood, Dec. 10-Jan. 18

**Cooper Union Museum,** New York
2500° F.: The Art and Technique of Modern Glass, Jan. 12-Mar. 20

**Museum of Modern Art,** New York
100 Useful Objects of Fine Design, thru Jan. 25
Architecture of Mies van der Rohe, thru Jan. 25

### OHIO

**Cleveland Museum of Art**
12th Natl. Ceramic Exhibition, Jan. 4-Feb. 1

**Columbus Gallery of Fine Art**
City Planning, Nov. 15-Jan. 1
12th Natl. Ceramic Exhibition, Feb. 12-Mar. 7

**Toledo Museum of Art**
Modern Textile Design, Jan. 1-14

### PENNSYLVANIA

**Philadelphia Museum of Art**
A Pageant of Fashion, 18th-20th cent., thru Feb.

## Addresses:

**A** American Cyanamid Corp., 30 Rockefeller Plaza, New York, N. Y.
Leo Amino, Clay Club Sculpture Center, 4 W. 8th St., New York, N. Y.
Chas. A. Anderson & Co., 1214 Nicollet, Minneapolis, Minn.
Art Steel Sales Co., 300 East 145th St., New York, N. Y.

**B** Bakelite Corp., 300 Madison Ave., New York, N. Y.
Baldwin Kingrey, 105 E. Ohio St., Chicago, Ill.
Barnes & Reinecke, 230 E. Ohio St., Chicago, Ill.
Bryant Electric Co., Bridgeport, Conn.

**C** C. K. Castaing, 109 Main St., Seal Beach, Calif.
Catalin Corp., 1 Park Ave., New York, N. Y.
Celanese Corp., 180 Madison Ave., New York, N. Y.
Clover Box & Mfg. Co., 816 E. 140th St., New York, N. Y.
Cohn-Hall-Marx Co., 40 E. 34th St., New York, N. Y.
Columbus Plastic Products, 1625 W. Mound St., Columbus, Ohio.
Inez Wood Crimmins, 5345 York Ave. S., Minneapolis, Minn.

**D** James E. Davis, 30 Nassau St., Princeton, N. J.
Dow Chemical Co., Midland, Mich.
Dubois Plastic Products, 37 Franklin St., Buffalo, N. Y.
E. I. duPont de Nemours & Co., 626 Schuyler Ave., Arlington, N. J.
Durez Chemical Co., North Tonawanda, N. Y.

**E** Eclipse Molded Products, 5150 N. 32nd St., Milwaukee, Wis.
Ekco Products, 1949 N. Cicero St., Chicago, Ill.
Electric Steam Radiator Corp., Paris, Ky.
Endurette Corp. of America, Clifford, N. J.
Erie Resistor Corp., Erie, Pa.

**F** Fabricon Products, River Rouge, Mich.
Fairfax Engineering Co., Kansas City, Kan.
Firestone Industrial Products, Akron, Ohio.
Forman, Ford & Co., 11 S. 2nd St., Minneapolis, Minn.
Formica Insulation Co., 4614 Spring Grove Ave., Cincinnati, Ohio.

**G** General Electric Co., Pittsfield, Mass.
B. F. Goodrich Chemical Co., 324 Rose Bldg., Cleveland, Ohio.

**H** Hartford Products Corp., 308 W. Washington St., Chicago, Ill.
Hedstrom-Union Co., Fitchburg, Mass.
Jon Hedu, 42 Porter St., Watertown, Conn.
Higginbotham & Co., Dallas, Texas.
Holly Manufacturing Co., 139 Aldrich Ave. N., Minneapolis, Minn.

**I** Industrial Synthetics Co., 60 Woolsey St., Irvington, N. J.
Insulation Sales Co., 251 Sixth Ave. S., Minneapolis, Minn.

**J** S. Jacobs & Co., 811 Nicollet, Minneapolis, Minn.

**K** Kaiser-Fleetwing, Inc., Bristol, Pa.
Knoll Associates, 601 Madison Ave., New York, N. Y.
Freda Koblick, 347 Clay St., San Francisco, Calif.

**L** Lactona, Inc., Lindeke Bldg., St. Paul, Minn.
Libbey & Libby Co., 244 2nd Ave. S., Minneapolis, Minn.

**M** Marblette Corp., 37-21 30th St., Long Island City, N. Y.
Minneapolis Gas Light Co., Marquette at 8th St., Minneapolis, Minn.
Monsanto Chemical Co., Springfield, Mass.
Motor Power Equipment Co., 2446 University Ave., St. Paul, Minn.
Peter Muller-Munk, Clark Bldg., Pittsburgh, Pa.

**N** Nu-Products, Inc., Constantine, Mich.

**P** Plaskon Division, Libby Owens Ford Glass Co., 2112 Sylvan Ave., Toledo, Ohio.
Plastishade, Inc., 41 Buena Vista Ave., Yonkers, N. Y.
Polyplastex United, 92-35 Horace Harding Blvd., Elmhurst, N. Y.

**R** Refrig-O-Bag Co., 435 Sexton Bldg., Minneapolis, Minn.
Reynolds Metals Co., Louisville, Ky.
Rodic Rubber Co., Allen Ave., New Brunswick, N. J.
Rohm & Haas Co., Washington Square, Philadelphia, Pa.

**S** Morris Sanders, 219 E. 49th St., New York, N. Y.
Sentinel Radio Corp., 2100 W. Dempster St., Evanston, Ill.
Sioux Falls Plastics Co., Sioux Falls, S. D.
Sperti, Inc., Norwood Station, Cincinnati, Ohio.
Standard Tank & Seat Co., Camden, N. J.

**T** Tennessee Eastman Corp., Kingsport, Tenn.
Angelo Testa, 177A N. Michigan Ave., Chicago, Ill.
George S. Thompson Corp., 509 Mission St., South Pasadena, Calif.
Tupper Plastics, Farnumsville, Mass.

**W** Donald A. Wallance, 1908 Eye St., N. W., Washington, D. C.
Waterbury Companies, Waterbury, Conn.
Watertown Manufacturing Co., Watertown, Conn.
Henning Watterston, 135 Jackson St., San Francisco, Calif.
Westinghouse Electric Corp., East Pittsburgh, Pa.
Russel Wright, 11 W. 42nd St., New York, N. Y.
David Wurster, 406 Waverly Ave., Brooklyn, N. Y.

**Z** Eva Zeisel, 431 Riverside Drive, New York, N. Y.