

# Yesterday's Tomorrow: History and Conservation of the 20th Century Plastic House

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## ABSTRACT

Plastics are now widely used in our daily lives and are a common component in construction. Their lightweight, high strength, relatively low cost, and ability to be formed into complex shapes brought a new possibility to design. During World War II, the research and industrial scale production of plastics rose exponentially. Between the 1950s and 1970s, a trend emerged to use plastics as a pioneering structural building material. This research explores the history and conservation of prefabricated houses that used fiber-reinforced plastic as shells through three cases: the Monsanto House of the Future, Fly's Eye Dome, and Futuro. Opened in 1957, the Monsanto House of the Future was the first building that used sandwich panels of glass-reinforced polyester filled with polyester-polyurethane foam. Its design explored the maximum use of plastics in construction by exploiting the unique physical and aesthetic characteristics of this young material. Fly's Eye Dome designed by Buckminster Fuller in 1965 went further to explore the ideal solution for mass-produced, low-cost housing. In concept, the house could make use of light and wind energy. Monsanto House of the Future and Fly's Eye Dome were prototypes designed for future use, but never industrially produced. Futuro came to market first as a "portable" ski-cabin in 1966. The commercial program, as well as other production lines for plastic houses, ended in the late 1970s, as a result of the rising price of plastic caused by the oil crisis. Approximately 60 of these saucer-shaped houses exist in the world today, and their current condition hints at the fate of plastic houses in general. In these three cases, plastic houses are treated with various measures. The technical question of how to address the unique aging mechanisms of plastics has arisen. And the new relationship between design and material authenticity brings with it the need to find a way to decipher the value and future of yesterday's plastic houses for today.

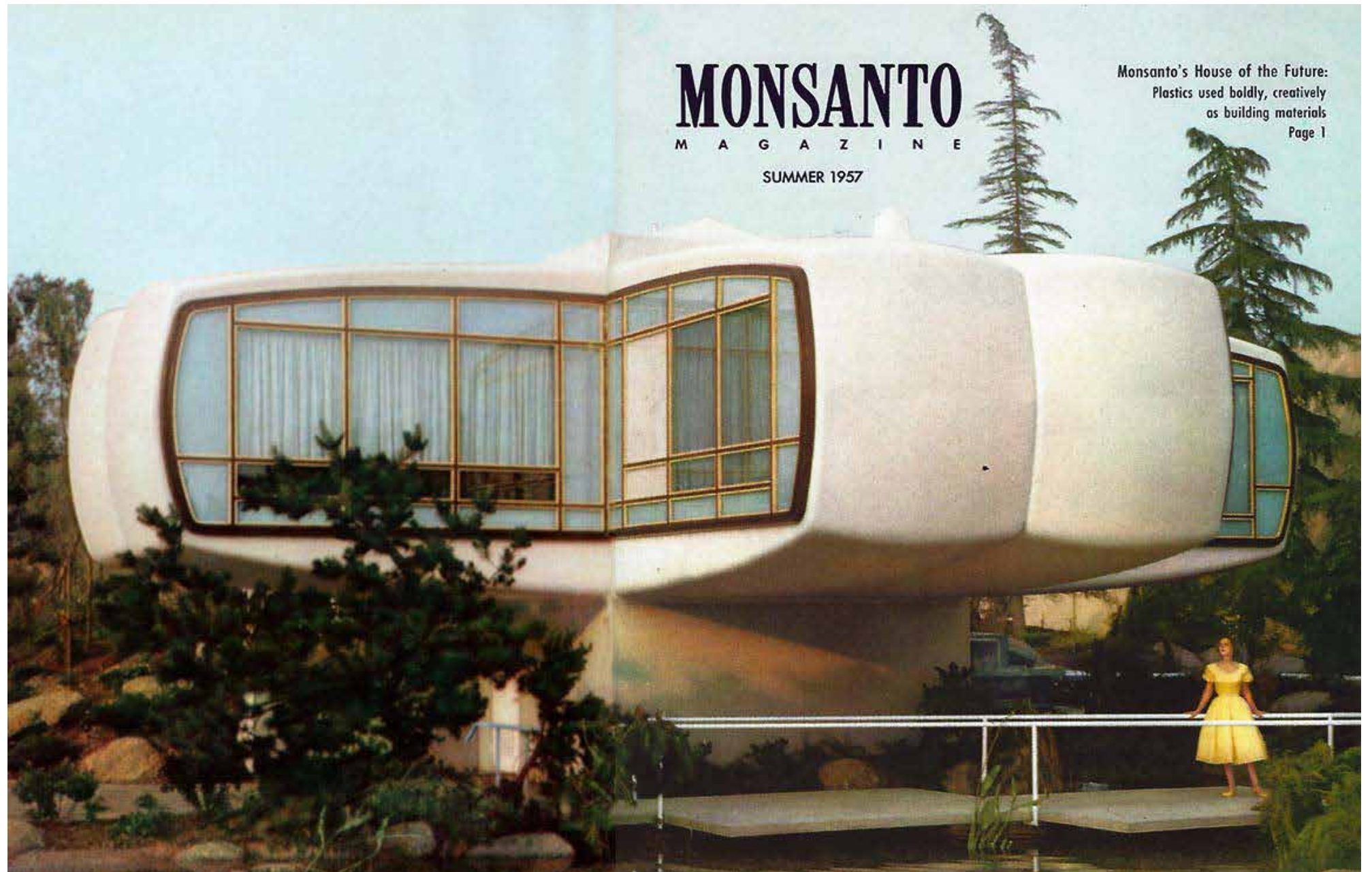


Figure 1. Monsanto House of Future, Anaheim, California, 1957. (Source: Cover image, Monsanto Magazine, 1957 summer. Retrieved from History of Disney Theme Parks in Documents, [www.disneydocs.net](http://www.disneydocs.net)).



Figure 2. New Fly's Eye Dome constructed in 2014, Miami, Florida, 2014. (Source: Buckminster Fuller: Fly's Eye Dome, 1979/80-2014, Miami Design District, <https://www.miamidesigndistrict.net/listing/395/buckminster-fuller-fly-s-eye-dome-1979802014>)



Figure 4. Futuro House in University of Canberra, after conservation, 2014. (Source: Back to the Futuro, University of Canberra).