

# UC Berkeley

## Room One Thousand

### Title

A New Architecture for Man: The Modular, Prefabricated Buildings of Ernest J. Kump, Jr.

### Permalink

<https://escholarship.org/uc/item/8gb6n8r4>

### Journal

Room One Thousand, 1(1)

### ISSN

2328-4161

### Author

Stiles, Elaine

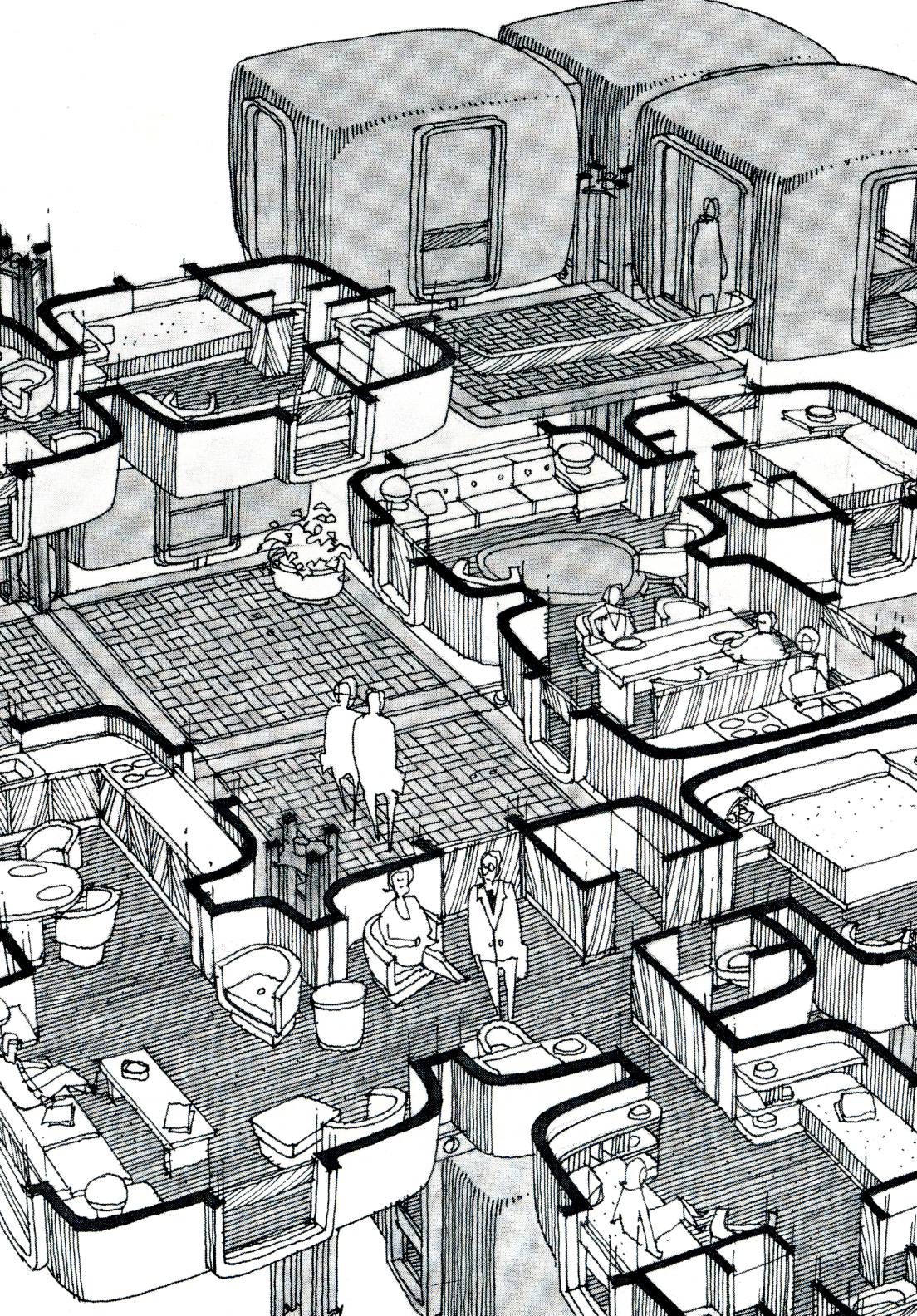
### Publication Date

2013

### Copyright Information

Copyright 2013 by the author(s). All rights reserved unless otherwise indicated. Contact the author(s) for any necessary permissions. Learn more at <https://escholarship.org/terms>

Peer reviewed





Elaine Stiles

# A New Architecture for Man

## The Modular, Prefabricated Buildings of Ernest J. Kump, Jr.

Selections from the Ernest Kump Collection, Environmental Design Archives,  
University of California, Berkeley

In 1957, Ernest J. Kump, Jr. (1911-1999) published a short manifesto in the *ALA Journal* entitled “A New Architecture for Man.” Kump imparted what he believed to be “basic truths and principles underlying the nature of architecture.”<sup>1</sup> Chief among these was that architecture, at its core, was the “expression of feeling through ordered space environment” and that the basic unit of architectural vocabulary was not material but modular space.<sup>2</sup> Following this premise, Kump advocated for an approach to architectural design based on the “cellular organization of organic units of space environment.”<sup>3</sup> He believed that if architects could create modular spatial units that were self-contained, attractive, and flexible, they could realize “for the first time true organic three-dimensional planning.”<sup>4</sup> The results would be a marriage of order, variety, and economy, and a better architecture for man.

Ernest Kump wrote “A New Architecture for Man” at the midpoint of his more than forty-year career in architecture. A student of Walter Gropius, the native Californian was a respected Modernist and nationally-recognized school facility designer. His manifesto both

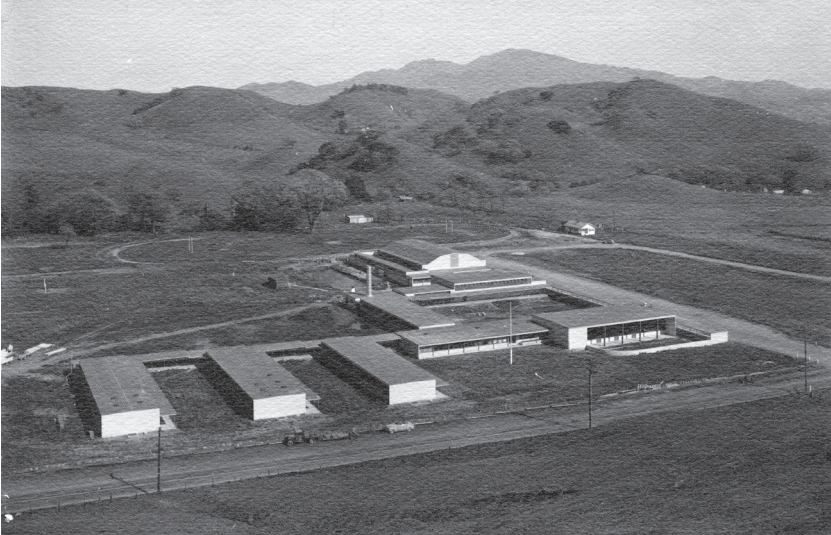
synthesized architectural concepts from his early work and served as a visionary statement for future projects. Using modular planning in his designs throughout his career, applying the concept to everything from campus plans to suburban housing, Kump was devoted to the notion that buildings could, and should, be mass produced. He incorporated elements of prefabrication in nearly all his projects and experimented with manufactured materials and prefabrication methods. Kump often partnered with engineers, builders, and manufacturers to refine his ideas, and eventually held fifty-nine patents for prefabricated building components, methods, and system concepts. His novel modular and prefabricated building systems present a series of innovative arrangements of cellular space.

### Acalanes Union High School, Lafayette, California – Franklin & Kump – 1940

[Figures 1A, 1B]

In 1945, the Museum of Modern Art selected the Acalanes Union High School for its exhibit “Built in the USA – Since 1932,” an important early showcase of Modern buildings in the United States. According to *Architectural Record*, Kump’s “finger-plan” school succeeded in “beheading that sacred cow of school boards—the idea that the structure should be a big, imposing edifice denoting solid virtue and civic pride.”<sup>5</sup> Instead, Kump looked to principles of “plant layout planning” to design a low-rise complex of single-story buildings organized along a grid of open corridors.<sup>6</sup> The plan allowed easy addition and expansion over time by extending the corridor grid to add classroom, administrative, or recreational units. The first phase of the campus, shown in Image 1A, grew over the next ten years to include six more classroom blocks, a library, and a second gymnasium. The steel-frame, single-pile classroom wings had similar flexibility, with four-foot modular plans and non-



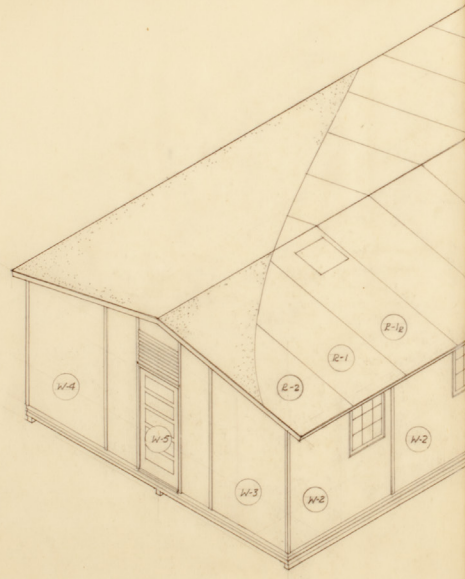


Figures 1A and 1B

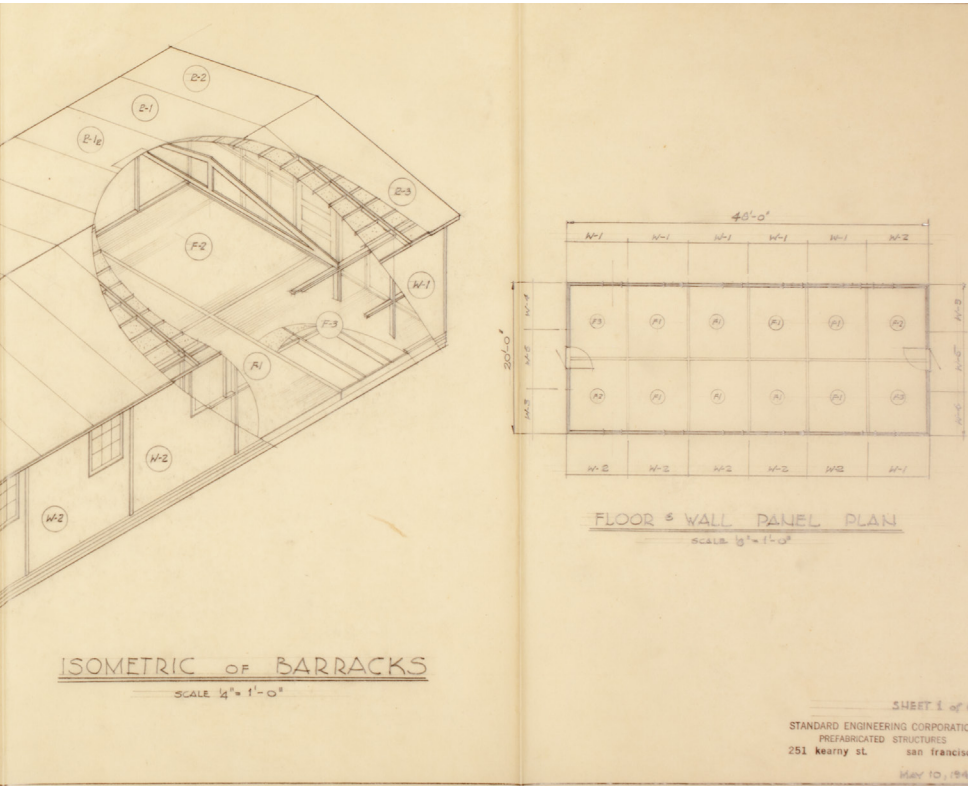
load bearing exterior and interior panel walls. The school could easily reconfigure each space by simply relocating interior panel partitions.



ROOF PANEL PLAN  
SCALE 1/8"=1'-0"







## U.S. Navy Demountable Barracks – Kump & Falk – 1943

[Figure 2]

During World War II, Kump and his partner, civil engineer Mark Falk, designed prefabricated demountable buildings for Federal Works Agency defense projects and the U.S. military. This barracks building for the U.S. Navy employed a modular prefabricated truss frame and wood panel wall and roof system. The building required minimal expertise or tools to construct, and workers could quickly disassemble, crate, transport, and reassemble the building when the Navy relocated temporary wartime installations.



University Park, Palo Alto, California - Ernest Kump Associates with Barrett & Hilp – 1953

[Figures 3A, 3B, 3C]

After World War II, Kump designed prefabricated, modular housing systems as solutions to the postwar domestic housing shortage. Kump's best-known prefabricated design was the 1945 "Prebuilt House" in partnership with Mark Falk and architects Wurster & Bernardi. The house used laminated plywood in its "arch-rib" frame, panel walls and roof systems. After the necessary site preparation, workers could assemble the building using only a hammer and screwdriver.<sup>7</sup> By 1953 when Kump partnered with suburban builders Barrett & Hilp on a modular plan, a prefabricated house design for their University





Park project, Kump had refined his prefabricated systems to eliminate many aspects of field assembly. The University Park houses were a system of nested prefabricated modular units. Based on shop facilities, construction site conditions, and available transport, builders could choose to prefabricate sub-modules such as kitchens or baths, or assemble those sub-modules into larger prefabricated bay units before transporting them to the construction site. Barton & Hilp constructed the first 900 square-foot, three-bedroom, one-bath house destined for University Park under Kump's supervision.<sup>8</sup>



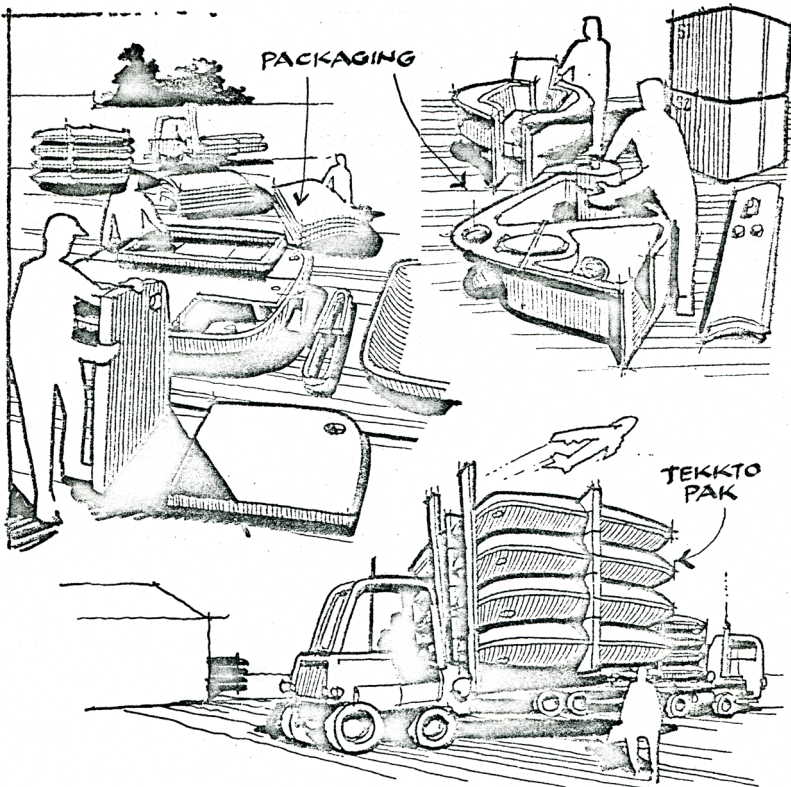




## The Tekkto System – Ernest Kump Associates – 1970

[Figures 4A, 4B, 4C, and optional 4D]

The Tekkto System was Kump's realization of his vision from "A New Architecture for Man." The modular "space pod" system was his purest expression of architecture as the cellular organization of units of space. "The space pod," Kump wrote, "is a veritable building block of livable space environment, with which one can build not stereotyped but diverse forms: individual dwellings, a village, or a multi-storied neighborhood. This means that, for a change, human desires, and not the system, can determine the plan and type of each individual dwelling."<sup>9</sup> The Tekkto system consisted of demountable, molded fiberglass pods that came in residential, educational, and commercial versions set into an expandable space frame. Pods had uniform openings on all sides to serve as doors, windows, or connections to adjacent units, as well as self-contained plumbing, electrical and environmental systems. Kump designed the pods to be mass produced, easy to assemble, and portable. The top and bottom of pod units formed the unit of the shipping container and four men could erect disassembled units in an hour. Kump marketed Tekkto as a solution to the U.S. housing shortage in the early 1970s, and later partnered with the United Nations Industrial Development Organization to explore use of Tekkto for housing in developing countries. The project entered the research and development phase, but was never realized.

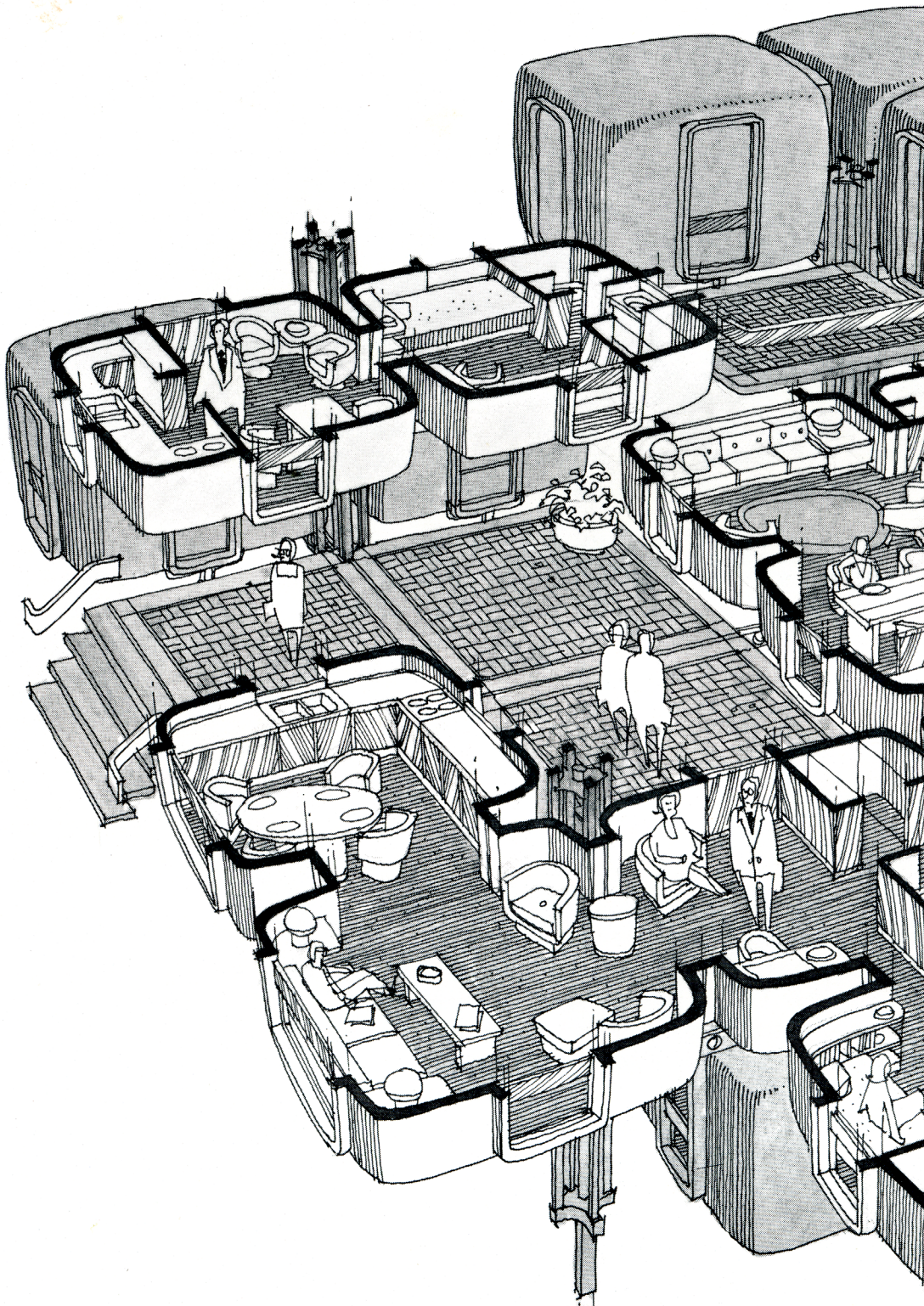


The supplier would assemble TEKTO paks containing one to four TEKTO monopods. The top and bottom shells of each unit become the shipping container for all basic items needed to assemble a unit.

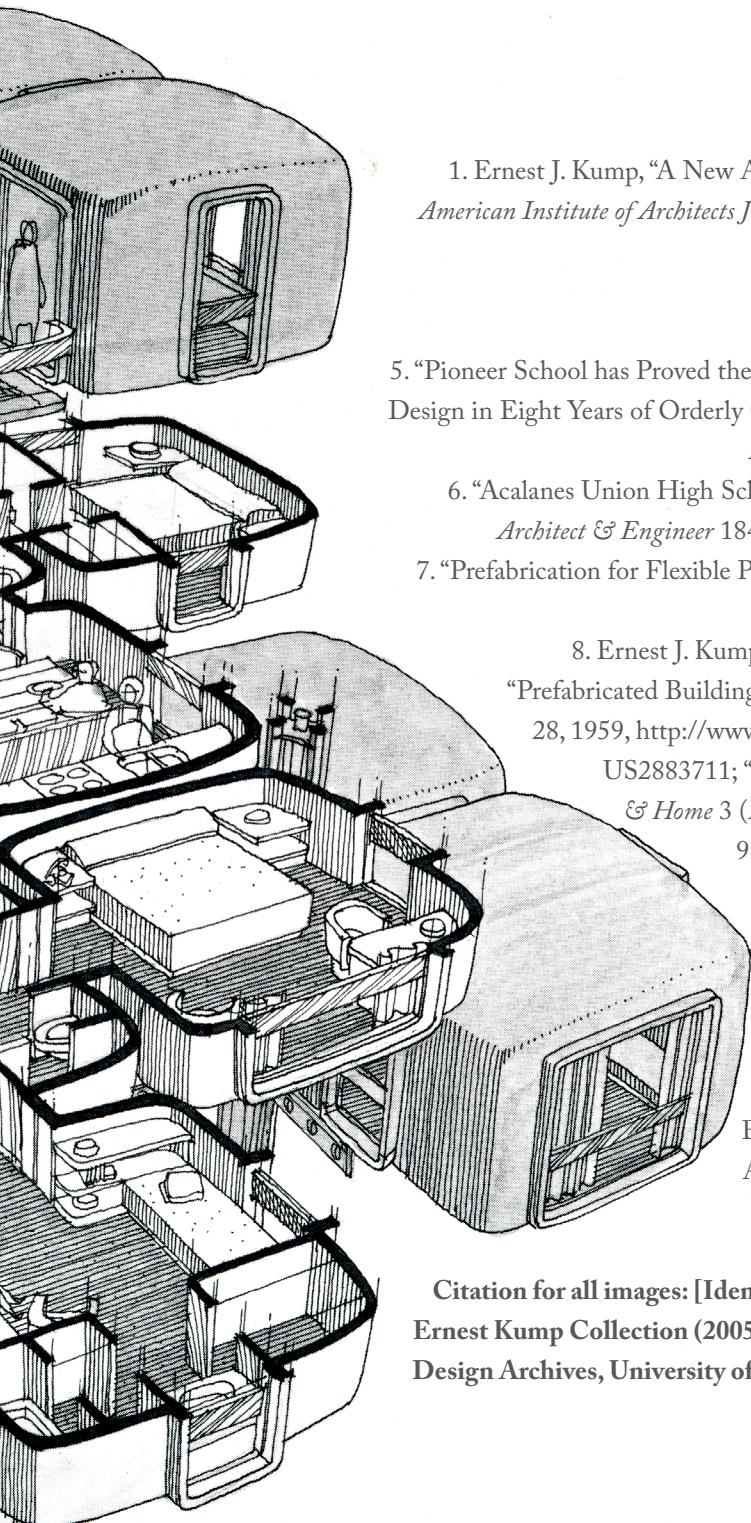
TEKKTO interior components designed to nest together, as well as door and window units, are taken from stock and prepared for shipment separately.

The TEKTO pak containing four units with an overall dimension of 12'-6" x 12'-6" x 10'-6" allows the pak to be transported to the homesite by truck, train, plane or ship.









[Endnotes]

1. Ernest J. Kump, "A New Architecture for Man," *American Institute of Architects Journal* 28 (1957): 392.
2. *Ibid.*, 392.
3. *Ibid.*, 397.
4. *Ibid.*
5. "Pioneer School has Proved the Value of its Scientific Design in Eight Years of Orderly Growth," *Architectural Forum* 91 (1949): 104.
6. "Acalanes Union High School, Lafayette, Calif," *Architect & Engineer* 184 (February 1951): 23.
7. "Prefabrication for Flexible Planning," *Architectural Record* 98 (1945): 98.
8. Ernest J. Kump and Ernest J. Kump, "Prefabricated Building Construction," April 28, 1959, <http://www.google.com/patents/US2883711>; "For Fast Sales," *House & Home* 3 (April 1953): 105-106.
9. Ernest Kump, "Draft Patent Application for Volkshaus: Modular Space Pod Housing," March 17, 1970, 2, Ernest Kump Collection, Environmental Design Archives, University of California, Berkeley.

Citation for all images: [Identification of Object], Ernest Kump Collection (2005-19), Environmental Design Archives, University of California, Berkeley



