

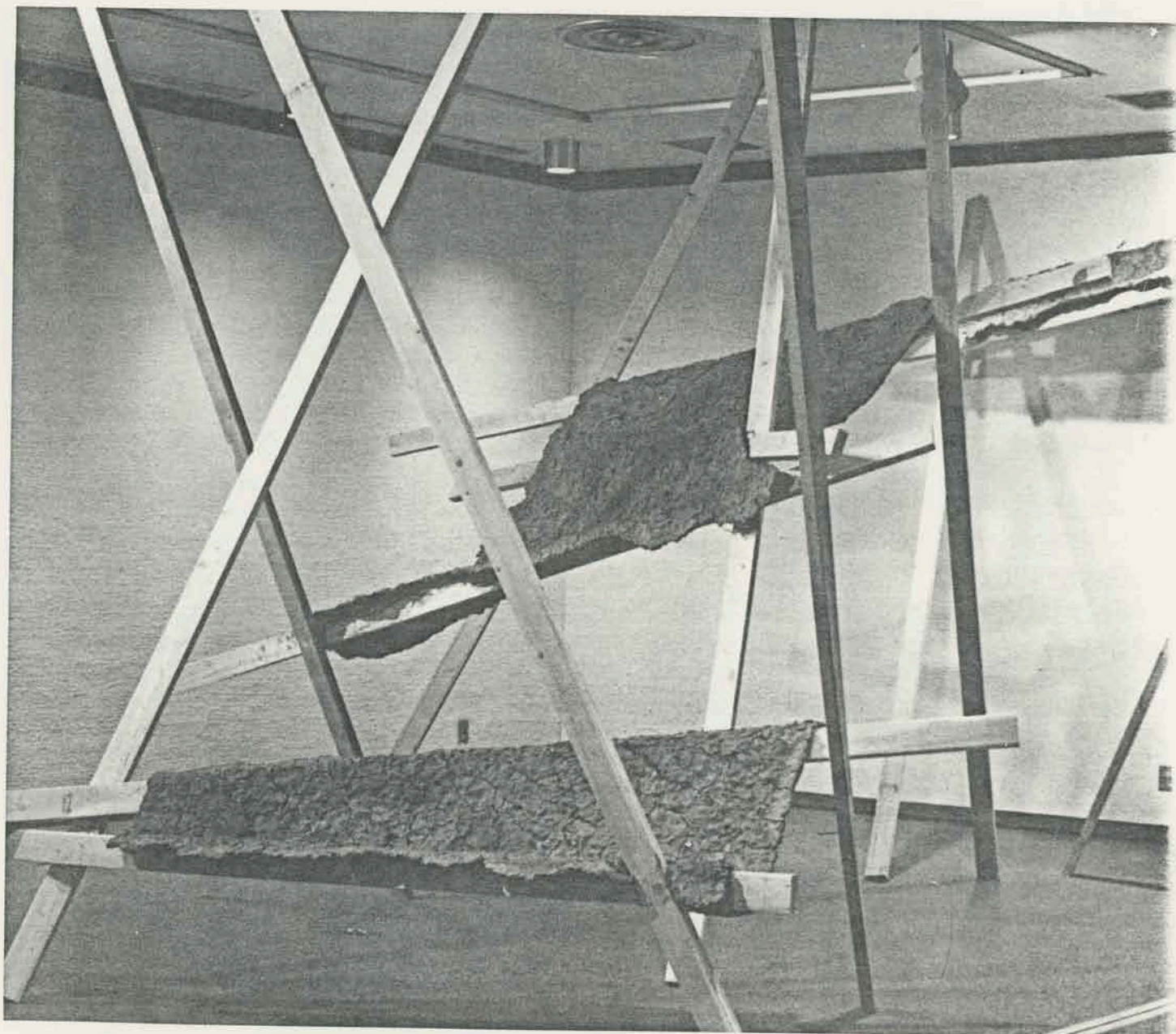
Adobe

by WILLIAM T. GILBERT

HISTORICAL USE OF ADOBE dates to the brick masonry of ancient Egypt, and before that to the stick and mud dwellings of nomadic tribes. It is still a major source of shelter for many cultures in arid or semi-arid climates. Most of the current information on adobe comes from the building industry in the southwestern states, and is based on its use as architectural brick—just one of the ways for the ceramist to use adobe.

The first step in developing an adobe body is to find soil that is low in organic matter, as this tends to weaken the material. Then, test for the proper balance of clay, sand, and silt by mixing a small amount of the soil with water in a glass jar. When the soil settles, the coarse sand will be at the bottom, the fine sand and silt next, and the clay at the top.

The basic proportions by weight of the composition for adobe are: sand (larger than 200-mesh) 55-75 per cent,



clay and silt (less than 200-mesh) 25-45 per cent, the specific composition depending on the working thickness and necessary plasticity.

Too much sand or silt will make a weak adobe that crumbles easily, while too much clay will cause excessive shrinkage and promote cracking. Straw can be added in small quantities to "open up" adobe soil which has excessive clay content. Soil containing primary clays—those with a non-expanding crystalline structure—are preferable. Since their expansion is less than other clays when exposed to water, primary clays can be present in greater proportions without danger of cracking. This is particularly important for work with adobe outside of the brick format.

In areas where naturally occurring adobe soil is unavailable, it can be produced from the following materials:

Adobe for Small Handbuilding

Sand (sifted through a window screen)	55%
Coarse Fireclay	30
Red Earthenware	10
Red Iron Oxide	5
	<hr/>
	100%

This recipe is suitable for small sculpture which requires body plasticity.

For larger sculptural pieces, cut back the earthenware content and add fine sand or soil to guarantee a more complete spectrum of particle sizes, which reduces cracking.

Adobe for Large Sculpture

Coarse Sand (20 mesh or larger)	50%
Fireclay	30
Red Iron Oxide	5
Fine Sand or Soil	15
	<hr/>
	100%

An unfired adobe mixture will disintegrate when exposed to moisture, so a variety of stabilizers can be introduced to make it impervious to water. Portland cement can weatherproof and strengthen adobe when used in additions from ten to twenty per cent by weight. It is best suited for use with soil that has an excess of sand in proportion to its clay content. For soils that contain a greater proportion of silt and clay, more cement must be used in

order to thoroughly bind the smallest particles. Like mortar or concrete work, it is important to keep the adobe wet for a few days while it hardens.

The other major stabilizer—now used in the California adobe industry—is asphalt in the form of asphaltum, asphalt tack, or emulsified asphalt. The latter may be mixed directly with water, and is generally added in concentrations from five to fifteen per cent of the batch, depending on the type of soil and the exposure to moisture the adobe will endure. Mix the emulsified asphalt first with water, then add soil.

A five per cent addition of emulsified asphalt will strengthen adobe without the weatherproofing or color-changing that occurs with larger additions. This stabilizer has a strong, lingering odor which can be a problem when used in large amounts for indoor sculpture. Emulsified asphalt is available from most paving companies, or from American Bitumuls Company, 320 Market Street, San Francisco 94111.

There are other materials—usually rejected by industry because of their expense—that can serve as stabilizers for use by the ceramist. Some of these do not affect color or impart an odor, and for that reason might be preferable to emulsified asphalt. Lime, sodium silicate, and Pectosol (a vegetable cement) warrant experimentation in adobe batches.

A variety of aesthetic and technical concerns can lead to the use of adobe as a sculptural medium: first, it is a move away from preciousness, and makes monumental-scale ceramics more feasible; second, adobe frees the ceramic process from its utilitarian roots; and finally, it allows a more direct involvement with clay as earth. The use of adobe enables the artist to produce temporary, large-scale works that may be constituted to break down to reusable materials upon removal—in contrast to the permanence of fired ceramics or the relative weakness of unfired clay. The qualities of low shrinkage, unfired strength, and little expense make adobe well suited for monumental sculptural works.

About the author William Gilbert is currently enrolled in the M.F.A. program at the University of Montana, studying ceramics with Rudy Autio and Ken Little.