AMAZING PAPERCLAY

by Rosette Gault

My demonstration began with a slide presentation of what paperclay is, what it does, why it works, and a taste of both conventional and unconventional methods of creating ceramic sculpture which are now possible. I showed a selection of slides of colleagues' work from Europe, Canada and the U.S. who have successfully used this material: lowfire, highfire, terrracotta, raku, salt and porcelain. Then I demonstrated how to make up paper pulp, add it to clay, wedge it and what can be done with the material. This article highlights the key points of new information I shared with the group.

Ceramic Sculpture Overview

Ceramic sculpture is a form of expression of ideas that can be seen no other way. For me, the assumption that clay forms are unlimited as a form of human expression was true in theory, not in practice. After a few disappointments in the kiln yard, or even in the drying room, students' hearts sink. We more experienced sculptors who had mastered our fear would hide the silent smirk, as if we had the right stuff and it was tough luck for the student who did not. I prided myself on the persistence required for success. If we teachers were not careful, we might inadvertently teach a craft, not of ceramic, but a craft of compensation for fear of cracks in ceramic. The number of promising students with good minds who abandon our field of ceramic for easier media which is more accessible and forgiving is testimony to the presence of such an invisible wall.

It was impossible for me to recognize just how much space in my mind had been occupied with this concern until I worked and tested paperclay in my hands. It gradually became clear that the absence of fear of cracks with paperclay was a liberation which could not be kept a secret.

Twenty-plus years of experience, habit, and attitudes were both an obstacle and a doorway to

Article by Rosette Gault, NCECA 94 San Diego Conference Demonstration
National Council Education for Ceramic Arts in USA

progress with paperclay. For example, I had been taught and I believed that only non-shrinking clay bodies would not tend to crack. I also was prejudiced against adding nylon and fiberglass fibers to my clay. Another idea I had is that a true ceramic artist knows and understands how to make even the most difficult of clays, such as porcelain, respond.

Fortunately, during an artist residency at Banff in 1990-91, free from the pressure to produce ceramic sculpture for a living, there was time enough to take risks, to experiment, and to investigate with focus and concentration. Thus, a foundation was laid for this information to be shared with the world.

Features of Paperclay

Before the first firing, paperclay will do what ordinary clay will not. Model layers of wet paperclay over bone dry. Paperclay is easy to repair and alter in the green state as many times as you desire. Paperclay has strong green strength. You can make large warp-free flat slabs, work with molds, insert bisque into wet, and the final result with your favorite glazes is usually lighter in weight. No wonder ceramic sculptors all over the world want to know about this material.

Paperclay is conventional clay to which the wet pulp containing cellulose fiber from recycled paper has been added. Like other common additives, the paper pulp you add ultimately evaporates in the bisque firing. Use your favorite clay, such as low-fire white and red, terra cotta, raku, porcelain stoneware, salt, and even scrap clay.

Common additives to make clay bodies more porous and lighter weight, such as sawdust or vermiculite, leave relatively enormous, round voids in comparison to the hair-like air voids from a fiber of cellulose. Nylon and fiberglass fibers have long been used to improve green and/or fired strength of clays. Man-made fibers, despite smoothness and uniformity, do not compare in size or variety to the much smaller, delicate, hollow, resilient, water absorbent, compressible, rough textured cellulose fibers found in paper pulp.

Compared to machine-made fibers, however, wet paper pulp has a short shelf life. After two weeks, the wet mix will start to stink unless preservatives have been added. However, if the mix is allowed to dry out, it lasts indefinitely. Additionally, if your kilns are poorly ventilated, the smoking in the first few hours of the bisque firing will not be pleasant.

Paper pulp is easily and economically made in your studio. Out-of-date printed non-glossy paper can be "recycled" in the process. Transport dry paperclay sculptures to the kilns without fear because tiny paper fibers dramatically increase the green strength of even the finest grained parent clay.

Fire paperclay as normal, provided there is more clay in the claybody than there is fiber. The clay will remain, and the fibers will burn away in the bisque. The usual glazes and engobes will continue to be compatible in most cases. Provided you understand your materials and have not added too much pulp, the finished pieces will be as strong as before. If you add lots of pulp, what you lose in strength may well be gained in weight loss! To start, try about 25% to 33% by volume ratio of pulp to liquid clay slip and adjust the recipe as you prefer. Specific technical concerns can be found in my 64-page spiral booklet, *Paperclay for Ceramic Sculptors, A Studio Companion*.

To gain better understanding of why multiple layers of wet p'slip (p'slip = paperclay slip) can be modeled directly over the dry even though the clay still shrinks, I sought out scanning electron micrographs of kaolin particles and paper fibers and observed their properties and relative sizes. Professor David Kingery at the University of Arizona then made electron micrographs and standard stress tolerance testing of my samples of dry and fired paperclay. My hypothesis was confirmed. In brief, when wet paperclay p'slip is spread over the top of dry paperclay, hollow tubes of absorbent, "thirsty" cellulose fiber that reach the surface of the dried out paperclay start to soak up the available water from the fresh paperclay layer. These tubes of fiber perform as a network of tiny roots in the claybody to distribute the moisture in a capillary action over a wide surface area. The cellulose fibers in the dry paperclay body expand and contract each time paperclay dries and more wet p'slip is added. The bond between both the older and newer layers of

paperclay is surprisingly strong, provided the ratio of pulp to clay is adequate.

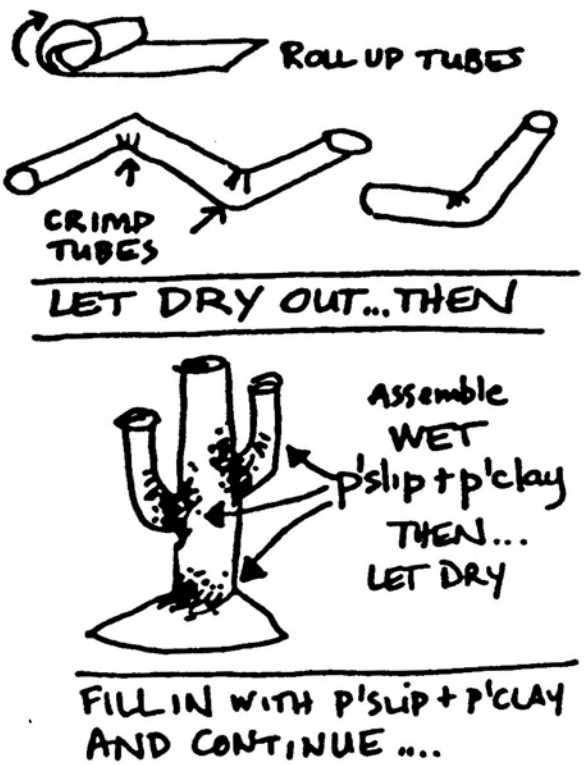
Sculpt with Paperclay

You will find paperclay is plastic enough for fine detail and surface texture. It feels only slightly different than the parent clay. Conventional methods of forming such as wedging, coil, slab, casting are only starting points. With paperclay, a sculptor has some alternative methods of building forms as options. For example:

Make a dry and hollow armature out of paperclay; then, when dry, let it support fresh layers of the wet and pliable paperclay. Take the time you need to get the structure the way you want it. You can break and re-break the bone-dry paperclay if you change your mind about a gesture. Reposition and reattach "arms" and "legs." Because of the wet on dry capability, plastic coverings are an option and not a requirement. In fact, bone-dry inner structures are often better support than leather hard.

Paperclay is great with plaster molds of all kinds. Spread wet p'slip with your hand into your conventional plaster molds opened up. Even though it doesn't pour quite like casting slip, smooth surface detail can be achieved. After several minutes, scrape off excess with a rib or with your hand. After 10-20 minutes or so, you can gently pull out a casting which is surprisingly strong but slightly malleable, too. Do not let the mix dry out completely inside a plaster mold, or it will be difficult to release.

Another new method is to make up some rolls, hollow tubes, or coils of paperclay in different sizes. Hollow rolls are strongest. Bend them how you like, maybe to form the gestures of the body. Let these dry out overnight. Next day, assemble a basic armature out of these tubes using wet and plastic paperclay to join the ends together smoothly. If that does not look right, break off an arm deliberately and reattach in a new position with more paperclay. Maybe drape some thin slabs—wet, dry, or damp—over the top of the dry structure. Later, after the form has stiffened up a bit or dried out yet again, add more thicknesses of wet p'slip or plastic paperclay to build up muscles or round and smooth out the surfaces.

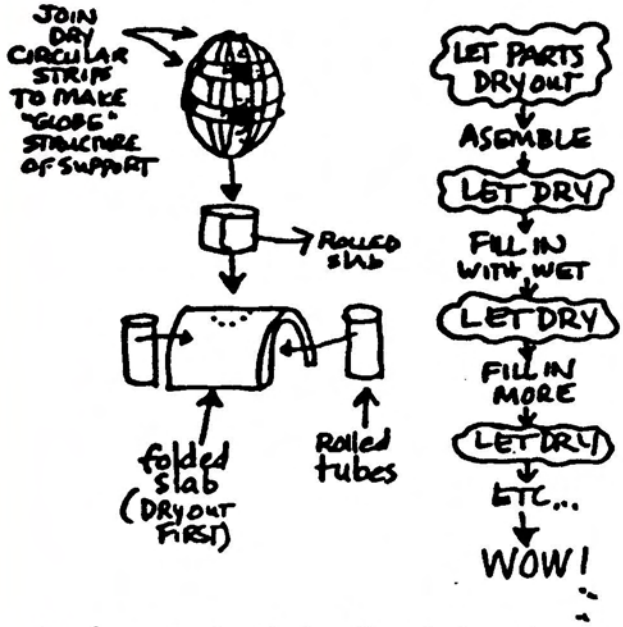


To model a face or figure out of paperclay, build a paperclay armature such as a globe structure out of dried, curved paperclay strips. You also can coil build or cast two oval bowls and let them dry. Assemble together rim to rim and putty in with wet over dry to fill in where the muscles and tissue are. Suppose you want to change the features on a dry face you modeled yesterday. Add a fresh layer of wet and/or plastic paperclay over the top and continue where you left off. Change your mind again tomorrow, and that's OK, too. Add as many layers as you need. The combined depth could probably be as much as about 3" or so, and the layers do not have to be even.

Another way to build a freestanding structure is to make a series of dried out concentric circles or shapes with coils or strips that can ultimately be stacked on top of each other dry and sealed together with wet paperclay slip and/or clay. Apply p'slip liberally to the dry surfaces for unusual textural effect.

Small bisque, glazed, or greenware ceramics may be embedded directly into the wet paperclay. I inserted miniature thrown pots and small sculptures

Article by Rosette Gault, NCECA 94 San Diego Conference Demonstration
National Council Education for Ceramic Arts in USA

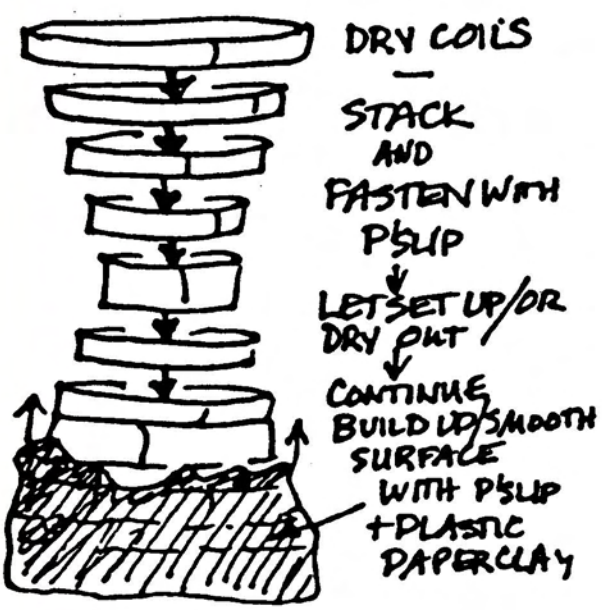


made of conventional clay directly into the wet p'slip and fired with success.

These are just a few of the handbuilding options now available for those who work with paperclay. Ceramic sculptors can choose from the best of both worlds, whichever is most appropriate. It seems to me that ceramic sculptors ought to work primarily at the cogent and clear expression of their vision rather than spend time sidetracked in labor over the technical difficulties of conventional ceramic. My hope is that students will leapfrog over the backs of their teachers, and we will get to see forms that have never been seen before in the history of the planet as a result.

If you decide to try this process, please let me know what you discover along the way. I can be reached at P.O. Box 9060, Seattle, WA 98109. Works were shown by the following artists: *Denmark:* Nina Hole, *Finland:* Merja Hellsten, *England:* Ibrahim Wagh, *Canada:* Ed Bamiling, Alec Sortoschynski, Grace Nickel, Anita Rocamura, Jennifer Clarke, *United States:* Gregor Turk, Jerry Caplan, and myself. Research for this presentation took place at the Banff Centre for the Arts; the University of Massachusetts, Amherst; and in my studios in Massachusetts and Seattle. Additional research and scanning electron micrographs performed by Professor David Kingery at the University of Arizona.

Rosette Gault and work in progress in studio, paperclay, 1993 (photo by Brian Gartside)



Rosette Gault is an instructor at the University of Washington Experimental College. Her work has been widely exhibited and is included in the collection of the International Museum of Ceramics in Faenza.