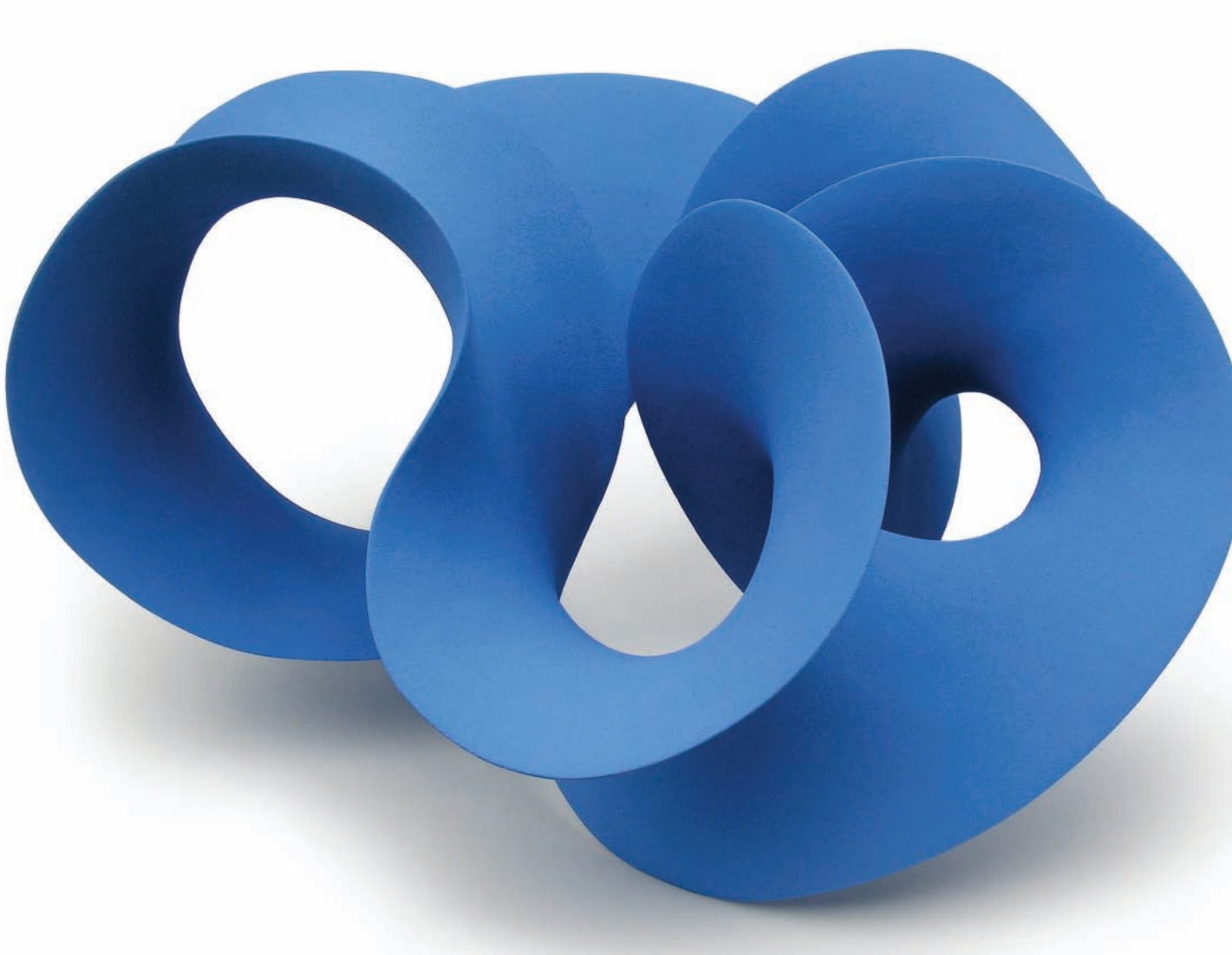

THE NEW CERAMICS

sculpting and handbuilding

Claire Loder

Dedication
For John and Wren and all the miles walked to give me a quiet house.

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COVER IMAGES: Merete Rasmussen, *Blue Twisted Form* (detail), 2011. Stoneware, coiled, 40 x 60 x 60 cm (16 x 24 in). *Photo: courtesy of the artist.*
COVER IMAGES: Fenella Elms, *Green Flow* (detail), 2011. Stained porcelain, wall mounted, 60 x 55 cm (24 x 22 in). *Photo: courtesy of the artist.*

FRONTISPIECE: Katherine Morling, *Large Tree*. Crank clay and porcelain, porcelain slip and black stain, 2 x 1m (6½ x 3¼ft). Hand built and slab built. *Photo: courtesy of the artist.*

RIGHT: Manuel Canu, *Floor installation*, 2011. Detail. *Photo: Ole Akhøj.*

Contents

LEFT: Phoebe Cummings making porcelain sprig-moulded leaves in the residency studio at the Victoria and Albert Museum, London, 2010. Leaf designs were drawn from patterns printed and painted on tableware in the museum collection. These designs were then modelled by hand in clay, from which plaster sprig-moulds were created. Individual leaves were pressed from the moulds to build together into three-dimensional forms.

1 Handbuilding techniques

'Clay is egalitarian and playful … it can be formed, pinched, pulled and sculpted.'[1]
Antony Quinn

Handbuilding is one of the most basic and versatile ways of making clay objects, the other two commonly used techniques being throwing and mould-making. Handbuilding offers artists great capacity for free expression and all the advantages of an intuitive approach.

The experience and knowledge to be gained by experimenting with the basic processes is significant. Understanding these processes will help you learn how the clay responds in your hands. For example, making a pinch pot helps you to understand the relationship between the initial ball size and the resulting object, while coiling and slab-building teach you how to scale up and enable you to work quickly. Carving and sculpting will hone your three-dimensional skills and give you a feel for the consistency of clay and its drying times.

All handbuilding techniques derive from a few simple processes: coiling, pinching, slab-building, carving and sculpting. Their definitions are amorphous and each process does not exist in isolation. Ceramicists, artists and potters combine, subvert and circumvent these processes to obtain the results they require. This chapter explores each of the techniques and offers tips on working with clay.

Preparing the clay

To minimise the risk of air bubbles, to ensure an even consistency and a decent, workable condition, it is good practice to prepare the clay before you begin working with it. Many ceramicists (including myself) use the manufacturer's clay straight from the bag without any trouble. Others always wedge their clay before they use it. It is important to understand how to eliminate pockets of air and produce workable clay whether you are using clay from the bag or not, especially as reclaiming or recycling clay should be a part of sustainable practice (see p. 16). It is also useful to understand what can happen if you don't fully prepare the clay, not only so you can diagnose problems that may occur in the firing, but also because you may want to capitalise on the cracks, splits and irregularities that arise as possible routes of investigation in your work, and to encourage these as features rather than flaws.

Wedging and kneading

Most ceramicists mix the clay by hand using various wedging and kneading techniques. Everyone has their favoured method and there is much debate about what works best. Confusingly, kneading is also referred to as wedging. Whatever their labels, there are two principal actions. One encourages consistency by aligning the clay particles and one works out any trapped air.

The first stage involves cutting a block of clay in half, rotating one half and slamming it down on top of the other. This promotes an even distribution of the clay molecules and any additives, such as grog. The second stage involves pushing down on the clay while working it into a spiral. This action eliminates any air pockets and evens out the moisture in the clay. Clay that already has an even consistency only needs the air expelling.

Wedging and kneading are physically-demanding activities, so it is important to work at the right height and maintain a comfortable working position. Get your body 'behind' the clay, so that you can use your body weight to help with the wedging. If you need to consistently prepare large amounts of clay, then a pugmill makes the job much easier. You will also need a strong workbench with an absorbent surface such as a plaster bat or canvas-covered board.

To expel any air from the clay it needs to be malleable. If the clay is too stiff, add water by poking your fingertips into the body of clay, filling the indentations with water and leaving it for a while.

There are various ways of spiralling the clay when wedging. Illustrated here is the 'ram's head' or 'ox head' technique.

How to wedge and knead

1. To wedge the clay, work on a firm, absorbent surface. Cut a block of clay in half with a wire, pick up the top piece, rotate it by 90 degrees and slam it down on the other half of the block. Repeat this process until the clay is mixed.

2. Before kneading, make sure the amount of clay you are preparing is easy for you to handle. Stand at your bench with your feet apart and one foot slightly in front of the other; use the weight of your body to rock the clay to and fro.

3. For the 'ram's head' technique, shape the clay into a rough rectangle and place your hands on opposite sides of the block. Tilt the clay up, cupping each side with your fingers, and then push down and away with the heel of your hands. The tilt and push action becomes a rocking movement which works the clay into a ram's heads shape

4. Cut the clay mass with a wire to check for air holes. If there are pockets of air visible, repeat the process, making sure to rotate the cut section and slam it down on the other half of the block as before.

Wedging is difficult to describe and takes practice to learn. If you are unable to find someone to show you how to do it in person, many online video tutorials are available, which are a good start. Try ceramicartsdaily.org, 'Clay wedging 101: A great way to teach and learn to wedge clay properly', or Youtube.com 'Pottery for beginners: wedging clay in pottery'.

Cutting the clay block for wedging using a cheese wire.

Slamming one half of the block down on the other.

'Ram's head' kneading – pushing the block down while cupping the outer edges.

Tilting the block up.

Pushing the block away from your body.

The 'ram's head' shape. *Photos: John Taylor.*

LEFT: Fenella Elms building one of her intricate structures. *Photo: David Parmiter.*

Reclaiming clay

It is very hard to avoid waste when you work with clay, but the good news is that until it is fired, all clay can be reclaimed and used again. Keep a lidded bucket, one for each type of clay (one for stoneware, one for terracotta, etc.) close at hand so you can collect all your scraps, trimmings, off-cuts and dried-out bits of clay as you go along.

How to reclaim clay

1. When you have a full bucket of scraps, lay all the clay pieces out on a clean, dry surface and allow them to dry out completely. If you break them into similar sizes, they will dry consistently.

2. Return the clay to the bucket and add water until it is completely immersed. Leave it for a few days to disintegrate or 'slake down' in the water. It will gradually turn into sludge. As the clay disintegrates, remove the excess water with a jug until only a small amount remains.

3. When you have removed as much excess water as possible, pour the soft mixture onto a plaster bat. Spread it out evenly to encourage consistent drying. Turn the mixture over regularly so that every part of the wet clay comes into contact with the bat.

4. When the clay has stiffened and is just dry enough to handle, roll it into a ball and remove it from the bat. Wedge it thoroughly, cutting through with the wire repeatedly. If the mass of clay is too large to handle in one go, break it down into smaller chunks. Knead the clay to give it consistency, then wrap and store.

ABOVE: Reclaiming clay: breaking the clay into small pieces to dry.

RIGHT: Covering clay with water.

RIGHT, BELOW: Spreading wet clay onto a plaster bat. *Photos: John Taylor.*

Tools

The type of tools and equipment required depend on the kind of work you are making. Handbuilding, by its nature, relies on only a few essential tools, though there are some additional pieces of equipment that make working easier. Many potters and makers craft or adapt their own tools, especially tools for cutting or modelling, but you can easily buy the basics to get started.

A basic toolkit consists of a potter's knife for cutting the clay; a cheese wire to slice through the clay block; metal and rubber kidneys for scraping and smoothing; a rolling pin; modelling tools and a potter's needle. Materials for wrapping (such as newspaper and plastic sheeting or plastic bags), a water mister or spray and a sponge for cleaning your work-station are also essential.

There are a few other useful tools and pieces of equipment. A banding wheel enables you to access the form easily and maintain a comfortable working height. Wooden boards make transporting and storing work easier and are useful for laying drying slabs or reclaimed clay on. A plaster bat is really useful for clay preparation and reclamation; a piece of canvas stretched across your table or fastened to a board works just as well. A selection of containers of various sizes, including bowls and buckets, is always handy, as is a small lidded pot for storing slip used for joining. A selection of brushes, spatulas and modelling tools can be bought, adapted or made.

LEFT: Tools and equipment – banding wheel, potter's knife, potter's needle, metal kidney, cheese wire, rolling pin, wooden modelling tools (in pot), rubber kidney (being used). At the back: water mister, selection of brushes, wooden spatulas and spoons.

BELOW: Various-sized loop tools used for carving.

BELOW LEFT: Examples of Frankie Locke's handmade or appropriated carving tools, and metal kidneys. *Photos: John Taylor.*

Christy Keeny, *The Bull*, 2010. Flax clay, painted with red earthenware slip and finished with oxides – manganese dioxide and copper oxide, 34 x 26 cm x 12 cm (13½ x 10¼ x 4¾ in). *Photo: courtesy ofthe artist.*

The techniques

Pinching

Pinching a pot from a ball of clay is often our first experience of handling the material. This rudimentary method works with all types of clay and is remarkably versatile. Pinching is the technique that carries the mark of the maker most visibly. Ceramicists such as Ingrid Bathe and Lilly Zuckerman exploit this characteristic, and their forms retain the traces of their making. The repetitive motion of their fingertips pinching the clay is evident in the surface of their work to varying degrees. This elementary technique can result in sophisticated and sensitive forms.

Pinching usually starts with a ball of clay sitting in the palm of your hand. Because the clay dries quickly from the warmth of your hands, pinching works best with soft clay. The drier the clay, the more risk of cracking and crumbling. This technique is a great way to learn about how clay responds to your touch.

A pinched pot can be manipulated or adapted into many shapes. Pinching is also a way of building up a form in combination with other processes. For example, you may have a slab-built base to which you add a pinch pot – or you can add bands of clay that you then pinch out.

How to make a pinch pot and a hollow form

1. Start with a ball of clay that comfortably sits in your hand. Mould it into a sphere. Supporting the sphere with one hand, press the thumb of your other hand into the centre of the ball. This basic principle of supporting one side of the clay while manipulating the other is the same across all the processes described here.

2. While keeping your thumb in place, rotate the clay around it. Begin at the bottom of the hole and pinch the clay between your forefinger and thumb. This action will expand the walls and also create the base of the pot. Squeeze the clay between your thumb and forefinger to judge the thickness of the base.

3. Once you have the basic shape, continue rotating the pot and squeezing out the base, walls and finally the rim until you have the thickness you require. Always leave the rim until last to avoid it cracking. Any cracks that appear can be smoothed with a finger or cut off with a knife.

From this basic method, a variety of pinch pots can be made. By altering the shape and depth of the initial hole and the amount of pressure and pulling you use to expand the walls, you can make many different shapes. Rolling the ball into a cone before pinching will produce an elongated form. Gently pulling the walls from the inside using your fingertips while supporting the outside wall will coax the form outwards. To shape the walls inwards, fold, gather or make a v-shaped cut and rejoin the edges.

4. A useful shape to make from a pinch pot is a hollow sphere. Made from two pinched sections joined together, this form can be adapted to make figurative forms, boxes and other hollow objects. After preparing two pots, cross-hatch the edge of each and wet with slip. Press together.

5. Firmly seal the join with your fingertips. A thorough join will ensure that the air captured in the hollow remains intact. The air pressure acts as a support, keeping the form inflated while you work on it. Once sealed, the object can be squeezed, rolled or paddled. Fix any punctures or cracks that appear with soft clay. Once you have finalised the form, and before the sphere dries out, make a small hole in it with a potter's needle, allowing enough air to escape and thus preventing cracks as your object dries and shrinks.

Lilly Zuckerman makes pinched earthenware vessels. She explains her process: 'Starting with a solid block of clay, I slowly and methodically pinch the form. No clay is added and very little clay is trimmed away … encompassing many changes of state, from the uncomplicated lump, heavy with potential, through precarious and fluid chaos, and ending with the form.'

A trip to Morocco, where the adobe buildings, cooking pots and geology inspired her forms, left Zuckerman with the sensation of seesawing between vast open countryside and claustrophobic narrow streets, zooming in and out from one vista to another. The presentation of her pinched vessels on vast farmhouse tables captures something of this sensation (see p. 118). Viewed from afar, as a horizontal panorama, the collection of vessels appears as clustered dwellings across the fields. Close up, they resemble buildings, walls, courtyards and alleyways.

RIGHT: How to make a pinch pot and a hollow form. *Photos: John Taylor.*

ABOVE, LEFT: Lilly Zuckerman, initial stages of forming a vessel with her fingertips from a thick clay slab.

ABOVE, RIGHT: Lilly Zuckerman, pinching out the two chambers of the tray.

LEFT: Lilly Zuckerman, coaxing the clay upwards, refining the walls. *Photos: Lilly Zuckerman.*

BELOW: Lilly Zuckerman, *Earthenware Tray*, 2011. Dimensions: 38 x 30 x 10 cm (15 x 12 x 4 in). *Photo: Lilly Zuckerman.*

Coiling

Coiling involves creating and using lengths or ropes of clay to build up a form. Endlessly versatile, coils can be used to build quickly and expressively. It is an ideal method for making large-scale work, but it can also be used to build fine, delicate objects. As Betty Blandino beautifully describes, coils 'may be as regular as bricks layered to build a wall, as random as dry stonewalling, or as rhythmical as knitting. They may give the pot the quality of the geological stratification of a cliff face, the wispy structure of a bird's nest, or the organic crumble of the earth's crust – or they may be smoothed to make the surface indistinguishable from that of pots made by other methods'.[2]

Coils are formed from lumps of clay rolled on an absorbent surface using the palms of the hands. A heavily-grogged clay can be squeezed in the hand to make a rough rope-like shape, then refined by rolling it on the work surface. Coils can be as small or as large as your hands will allow. Smaller coils are suited to fine small-scale pieces, while larger coils are good for building larger pieces and quicker building. A fine clay, like porcelain, is good for delicate coils that make thin-walled vessels. But there is nothing to stop a counterintuitive approach: try rough, quickly-formed coils and see how the porcelain responds. As for the shape of the coils themselves, they can be long ropes or short pellets depending on the nature of the form you are constructing.

Depending on the type of clay and the size of the coils used, coiling can be a fast process, ideal for building intuitively or with precision, which skilfully mimics other processes, such as casting or throwing. Grogged clay, such as crank or raku clay, formed into fat coils, is ideal for building fast and expressively. At the other end of the scale, porcelain is finer and results in a more subtle, refined structure.

Like all handbuilding processes, coiling is easily combined with other techniques. For example, composite objects can be constructed by joining a coiled organic shape to an angular, rigid slab form. Or fine coils can be added piece by piece to a rough-hewn lump of clay. Throwers often complete their forms with coiled sections. A coil can even become slab-like by flattening a rolled coil to make a ribbon of clay.

Coiling tips

Allow for drying time as you build, especially with large structures. Coils already in place will need to be stiff enough to support subsequent coils built up on top and avoid collapse. Air-dry your form; the most recent coils can be wrapped in plastic to preserve moisture while allowing the lower coils to stiffen. If you are varying the thickness of the coils, or combining processes, then drying times become even more important. In these cases it is essential to dry the work slowly to prevent cracks appearing at the stress points between thick and thin sections of clay.

Fresh clay will be soft enough for each coil to adhere to the next without adding slip. If the top coil becomes too dry, then score the surface and brush it with slip before adding the next coil. The coils need to be firmly joined on the inside of the form to prevent horizontal cracks.

Coiling is a particularly adaptable way to build. To adjust the form you can manipulate the coils with your fingers by squeezing or pulling them, or paddle the clay into shape with the appropriate tool, as illustrated in the pinch-pot section. For a small pot you can build with one continuous coil in an upwards spiral. For larger pieces, you can prepare the coils and store them in plastic. For fast building you can use an extruder tool, which has a shaped die plate at one end. This allows you to create different coil profiles depending on the aperture of the die plate.

Coiling a vessel shape

1. Working on an absorbent surface such as a plaster bat or canvas, create a clay slab by using a rolling pin or the palm of your hand. Cut out the base of your piece. Alternatively you could start with a pinch pot, or coil the base, starting from the centre and coiling outwards in a spiral. This can be done flat or by rolling a coil on its side.

2. From sections of prepared (wedged/kneaded) clay, roll out coils using the palms of your hands and your fingers. Start with your hands close together and move them wider apart to lengthen the coil. Rotating the coil will keep it round and prevent it from flattening too much. As you build, the coils will thin out, so make them slightly thicker than the required width of the final wall.

3. Working with a board or bat on a banding wheel, add the first coil to the base. If the clay is soft enough it will bond without water. If the coils are drier you will need to score the surface of the bottom coil and add slip before attaching the new coil.

4. With a dragging motion, using your finger or a tool, attach the first coil to the base along the inside edge. Where the ends of the coil meet, smooth the clay together. As you build, stagger these joins to avoid creating a vertical stress point.

5. Once you have several coils in place, bond them together from the inside whilst supporting the clay on the outside. Do this by dragging the clay downwards with the tip of your finger. If required, smooth the interior surface with a wooden tool. You can join the coils on the outside too (as shown here) or leave them intact.

6. If you are building a form that opens out, as shown here, make each new coil slightly larger in diameter. Do the reverse to taper in. Consider your surface: for a totally smooth finish, bond the coils as in Step 5, then smooth and refine with a metal kidney. This surface has been textured by using fingers to blend the clay downwards in a rhythmic motion.

Danish ceramicist **Merete Rasmussen**'s abstract sculptural forms explore the possibilities of a continuous surface. Soft curves contrast with sharp edges, concave shifts to convex, and negative spaces and inner space oscillate. With no visible start or end, these wide ribbons of undulating clay are purposefully perplexing for the viewer and technically challenging for the artist. Rasmussen uses stoneware clay and, incredibly, her pieces are coil-built. 'I like to challenge the material and my own skills by building complicated shapes,' she says, 'fragile in the building, drying and firing

RIGHT: Coiling a vessel shape.
Photos: John Taylor.