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Kaldahl's Digital World - FOKUS no. 4, 2008

In ceramicist Martin Bodilsen Kaldahl's artistic 3D experimentarium at Danmarks Designskole, tree branches and highway interchanges combine to form countless fantastic forms – and the digital universe proves an endless source of inspiration for developing new expressions in the world of clay.

By Anne-Marie Gregersen

How far can clay be stretched? How can the computer and its digital tools serve as inspiration for developing new expressions in ceramics? And what happens when craftsmanship and stone-age techniques are challenged by 3D graphics, strange computer-generated shapes and new artistic expressions?

Those are some of the difficult questions that ceramicist Martin Bodilsen Kaldahl has been grappling with in recent years, as he has engaged in purposeful play with the digital tools in order to develop new ceramic expressions.

Martin Bodilsen Kaldahl belongs to the international pioneer generation of cutting-edge ceramicists who have been challenging familiar perceptions of crafts since the early 1980's. With vim and vigour, he has kept pushing boundaries and driving new developments in the field of ceramics, and the more traditional rounded, natural shapes find a qualified counterpart in his tight compositions with their clean, geometric lines. He has experimented with the impact of ornaments on form; in Kaldahl's sculpted stoneware, stripes are never just there for decorative purposes - they are an integral element in the form expression and serve to expand it. His one-off pieces are on display in the world's leading museums. This 53-year-old Danish ceramicist with the international range and outlook keeps developing and renewing his expression by drawing the global world and modern technology into his work - currently as a guest researcher at Danmarks Designskole in Copenhagen, where he is more than half-way through a three-year project concerned with artistic creation and digital experiments.

Digital ceramic form

Martin Bodilsen Kaldahl's development project takes its point of departure in his own one-off pieces and the artistic method he has applied over the years. In his office at Danmarks Designskole his workbench and bulletin boards are filled with 3D graphics, scans of physical objects and stacks of prints with bird's-eye views of landscapes from Google Earth. In the middle of all this, one finds the ceramicist himself, delighted and deeply fascinated with the computer and the digital tools. But what is his project all about?

"It is about digital ceramic form. From the beginning, I have aimed for methods with an artistic base and a process that reflects the way I work as a designer - with the goal of developing a new artistic direction in ceramics. In architecture and design, it is quite apparent that the computer has an aesthetic impact on everything in our environment, but this way of linking up with the world might not necessarily seem that obvious in relation to the ceramic tradition with its familiar archetypes of jars, jugs and cups - although, of course, one may apply an abstract approach to these archetypes as form without taking much interest in function, as I have for years. In the digital universe, I saw an opportunity to develop this area, although I had absolutely no prior experience with or knowledge about computers."

With a keen eye on the explosion of shapes and experiments in modern architecture - such as Frank O. Gehry's Guggenheim Museum in Bilbao - Martin Bodilsen Kaldahl delved into the world of digital tools and the dizzying range of possible expressions, mainly the 3D graphics in the program Cinema 4D (for example the NURBS functions in 3D programs and the blend tools in the 2D programs).

"This is all very experimental. To a large extent, the process is governed by random factors, as I don't work in a systematic way or make detailed plans. I take a far more intuitive approach, and as I go along, I can tell whether or not a given idea seems promising. What I do is throw a lot of things into the air and find inspiration along the way, and then I try to sense where this material might take me. I have spent a great deal of time getting under the skin of some of these programs in order to find forms that I could work with, and then I have linked certain geometric parameters together with other, random parameters. I have also been very absorbed by 2D image manipulation, combining photos and drawings - especially aerial photographs of Earth from Google Earth, including, for example, a large collection of amazing highway interchanges around US cities and Spanish landscapes with mountain villages and intricate circular patterns of fields around irrigation facilities. I have been deeply fascinated with this sudden opportunity to introduce images into my universe, which otherwise tends to revolve around very tight and precise approaches to form."

Simple images - complex forms

During the past six months or so, Martin Bodilsen Kaldahl has concentrated mainly on 3D experiments where natural creations meet the manmade, for example, as two tree branches combined with a tubular highway interchange that forms a sort of bow on the branches. This is a logical construction in the sense that the natural shape of the branches determines the overall image, and on a very simple level the image combines nature and culture to form an object that requires no explanation. But this apparent simplicity reflects very novel design principles; the highway interchange reflects an incredibly complex organism that emerged from individual expansions, and it is difficult to imagine that anyone planned the whole thing from start to finish.

"In a way, the whole thing is very straightforward, and the images should appear very simple, although they are in fact highly complicated to produce. That little piece of a tree branch is so anonymous that there is no way to tell where it even came from. All you can tell is that it is a branch that has been cast, not shaped; then I let it encounter a digitally shaped, geometrically based form, while making sure that the whole thing resembles a branch - that it adheres to a certain logic determined by the branch, although it suddenly contains two worlds that are brought together: The shape and genetics of the branch combines with a geometrical shape that is evidently shaped and determined by volition."

Many of the 3D manipulations that Martin Bodilsen Kaldahl has created, as if by magic, in his computer, appear so simple that it seems they would have been easy to create manually. But that is far from the case. The digital medium has opened an amazing world of fantastic shapes that not even a gifted ceramicist was able to imagine or dream up.

"I can generate a relatively simple shape, for example, by asking the computer to connect the top and bottom levels of a set of layers so that the shape intersects itself. A digital printer is unable to read this, but these shapes are interesting, because they are impossible to conceive of, so that brings out new ideas for shapes, which then in turn put other, familiar shapes into perspective."

The artistic expression

But even a ceramicist who delights in blazing new trails may find it difficult to escape the ceramicist's inherent sensibilities, for example in relation to containers or hollowware. Even though Martin Bodilsen Kaldahl does not design jars by computer, some of his colleagues nevertheless see something jar-like in some of his digital experiments. But the

artistic expression is challenged when the computer's many amazing programs push the envelope - when there are no material constraints to hold back the initial explorations of the countless potential mergers of shapes and patterns.

"One can experiment to see what happens to rhythms or stripes if one introduces slight interruptions. Or what happens to pure and transparent colours that are allowed to overlap, or to images when they are wrapped around a shape. The themes that I have been addressing in my work with clay for years don't go away. As you see, for example, in my Knotpot series, which revolves around the anatomy of knots and the surrounding space. It simply provides new ways of seeing them, and it's great that I can now link the two-dimensional and three-dimensional approaches any way I feel like. Out of all this, I attempt to extract something that lets me say: Now I know how I want to approach this in clay, or that lets me determine that the idea should not be carried out in clay in the first place".

But even if stone-age ceramics traditions, like pots made from clay rolls, are a far cry from the computer's 3D shapes, spatial renditions and 3D prints, there are some surprising parallels. For example, both processes have a layered structure.

"For years, I have used clay rolls as my preferred method of modelling, which has helped me develop the ability to envision where a shape is gradually heading. There is a certain inherent logic to this, so when I began to design in 3D, my work with clay had taught me to draft, and during the modelling process I would decide the shape of the finished piece. Thus, when I had modelled something in 3D, I found that it was pretty close to finished, that I knew what the shape would be like - now it was up to the machine to do the rest. It was funny to see how deeply ingrained one's basic method is."

From digital form to physical object

After the many experiments, Martin Bodilsen Kaldahl is approaching the phase in the three-year project where he has to determine what has staying power. What has artistic merit beyond the mere novelty effect? And how can the ceramicist apply the digital shapes to clay with its inherent limitations? Many shapes in the digital world are striking and can be used for almost anything, but that is not necessarily interesting in an artistic sense. The artist has to stay on his toes: When anything is possible in the digital world, triviality may be lurking around the corner.

"If you consider what you're doing as something more than a here-and-now thing ... as something that may have some sort of aesthetic validity or long-term value, it is essential that the things you choose to create have substance. That they go from being 'effect' to being 'content'. That is why it's crucial that I stir up everything in the process, so that I can pick and choose and discover what in fact has artistic merit. That is a slow process, but it resembles the way I have always worked. I have always drafted for years before I began to actually make things, and I am not afraid to give things the time they need to mature. If you have a million ideas, you may as well give them time to settle!"

Martin Bodilsen Kaldahl has generated a large library of shapes and ornaments, which he keeps returning to and combining in new ways. There are patterns from Google Earth, where tract housing developments form intricate patterns, or where boats anchored in a circle around a pier form a flower. And there are the knots that Martin Bodilsen Kaldahl loves, based on his photos of experiments with knots made of bicycle racks and limber vacuum cleaner hoses which are then modelled tightly in small bits of clay.

"It is essential to get a new look at familiar things and take a fresh approach to the things that seem interesting. Ceramics is an area where it is easy to wind up with something so esoteric that only a handful of people have any clue why anyone would make jars that look like that. That makes it crucial for ceramicists to link up with the modern world as it looks today. For this purpose, the digital tools are great with their unlimited possibilities for finding inspiration - and for converting some of the relatively simple shapes to the world of clay and developing a new, feasible ceramic idiom. Sometimes I feel that many might find it difficult to look beyond the surface, because I strive to produce ceramics with a very straightforward form. It is important for me to create one-off pieces that don't try to be weird or odd, because then that's all that people notice. Things should be so simple and concentrated that one can perceive them in one go, immediately taking in what is going on. But additionally, there should be some food for thought; a world inside the piece that is larger than the thing itself - something that causes people to have their own personal associations, depending what they bring in with them."

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