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**TO:** The Editor

## **CUTTING WITH WATER – AN ART NOT A SCIENCE**

CNC waterjet art - Control Waterjet Cutting use state-of-the-art technology to cut materials as diverse as aluminium to granite and glass. Used throughout industry as a method of cutting accurate and fine profiles waterjet technology is still relatively unheard of in the art and design world with only a few pioneering companies proactively offering their services to the craft and design market.

One such company is Control Waterjet Cutting. Based in Chesterfield, Derbyshire, Control Waterjet has developed a connection with some leading members of the art and design community through their ability to meet the needs of the artist to maintain the individuality of the creation with the science and engineering that surrounds waterjet technology.

While artists strive to harness new technologies to produce their creative visions many are constrained by the mechanical limitations of machines, processes and skill of the engineers. The challenge, inevitably, lies in the relationship between the artists' vision and the skill of the engineers to translate that vision.

Commenting on the connection between the artist and the use of technology, Liz Lemon, a public art sculptor and artist based in Nottingham said, "It is important that

the work that is produced retains the individuality that has been incorporated into the design by the artist. This is very important to me. My work, such as the Bolsover Gateway design, includes fine drawings of birds, prehistoric dragonflies and signatures cut out of the steel panels in the gate. This required very delicate craftsmanship. Control Waterjet Cutting's approach enabled the work to maintain the intricacy and individuality that I had envisaged."

Waterjet technology is a computerised cold cutting technology that can cut most materials such as marble, granite, porcelain, ceramic, vinyl, glass and all metals. It is a clean process that does not heat, harden, or distort metals and is so gentle it can cut glass. A key benefit of the technology is that it can be used for cutting composites and plastics that cannot tolerate heat, mechanical damage or delimitation. This gives the artist the freedom to choose a wide range of mediums.

Anything that can be drawn on a computer can be cut by waterjet. Although the skill in the art and design market is the engineers' ability to translate the artistic vision of the designer or architect, sometimes a pencil drawing or people's signatures, through a cold programming medium into a sculpture or art form.

Waterjet cutting has significant advantages over competing cutting methods, such as routers, plasma torch, laser cutting and electrical discharge machining (EDM). It can cut through materials considered un-machinable by conventional cutting methods.

Waterjet cutting technology also has cost advantages over traditional methods. Depending on the material, thickness and intricacy of the cut, the savings compared to traditional cutting methods can be substantial. And many materials like stone, porcelain, and stainless steel cannot economically be cut into complex shapes in any other way.

Underlining the unique abilities and application of Control Waterjet Cutting's techniques, Stewart Ellis, Managing Director of J C Balmforth, a midlands based pattern making and casting company with a long history and heritage, said, "We had a very intricate Melting Clock sculpture that a leading designer wanted us to cast as a limited addition in aluminium. It is a complex design with lots of distortion and cracking. The cutting on the face and body, that gives the cracking effect, presented us with a challenge. We could not use laser cutting due to the thickness of the materials. We could have cut by hand but this would have been very costly.

After investigating the alternatives we commissioned Control Waterjet Cutting. They developed the process to cut the clock faces and produced samples. The cutting was very fine and gave us the perfect solution."

Reinforcing Stewart's findings Johnny White, renowned public and kinetic sculptor said, "We settled on waterjet cutting because of its ability to produce very fine cuts in thin material without distorting the material due to heat being generated. This is very useful as it means we can use the process for developing the most complex designs.

Waterjet cutting is a relatively new process with many advantages. I have been using other cutting processes for the past ten years but have moved to waterjet cutting because of the quality of finish and degree of control it offers. When cutting aluminium there is also the added benefit that the cut edge is not porous, so a good seal is achieved when it is anodised. In addition it leaves softer edges that are more aesthetically pleasing with the added bonus that they do not have to be de-burred.

We always use Control Waterjet Cutting for our work because of their ability to translate our ideas into practical finished work. They are also very service focused." he added.

The waterjet cutting process is an environmentally friendly solution to many complex cutting operations. The process is clean, does not create dust, grindings, chips, or chemical air pollution. Waterjet carries away the eroded material, practically eliminating dust and does not generate pollutants and fumes associated with other cutting methods. Cutting oils or emulsions are not needed with this process.

Explaining why Control Waterjet Cutting specialises in the art and design market, Claire Smith, Managing Director of Waterjet, said, "We have developed this market through understanding the needs of our clients. When there is a difficult and complex job with very fine cutting and technical problems we will provide a no fuss solution. The challenges can be technical with an innovative approach to overcoming the production problems relating to a material or cutting form. We feel our company's approach to working with our clients' and the high service levels we give is our edge in this market."

If you have a complex cutting requirement or would like to have further information regarding Waterjet's capabilities please call Ian Macpherson, Sales Manager of Control Waterjet Cutting, on 01246 284000.

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**Notes: -**

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