

## IRON MAN

American artist and iron forger Tom Joyce has melted, smelted and hammered a reputation for dismantling the barriers between art and science. His work is rooted in knowledge – and for him, work is life: ‘There’s no separation between the things I do inside or outside of making a livelihood,’ he says...

Words Nick Scott | Photographs Christopher Sturman

To describe Tom Joyce’s close bond with his main material of choice as ‘scholarly’ would be a tepid assessment. ‘Iron comes from out in the universe, it’s at the Earth’s core and within its mantle, it’s in our bodies and coursing through our veins. It performs complex tasks in both micro and macro environments. I’m still astonished by the scenario that initiated the conditions for oxygen-breathing life – when one of our planet’s first micro-organisms, cyanobacteria, a blue green algae, evolved to feed on iron particles in the sea and produced oxygen as a by-product, creating an atmosphere conducive to life as we know it.’

Joyce’s love affair with this life-giving element began around 1970 in El Rito, a small village in Northern New Mexico, to which his family had moved from Tulsa, Oklahoma. Enticed by the sound of hammering from the shop owned by letterpress printer and blacksmith Peter Wells, the then 14-year-old Joyce wandered into the

premises. ‘He just allowed me to be in the space, without asking what I was doing there, and when he was finished he put the cool end of a hot iron bar and hammer in my hands. I felt as though they had always been there. Through his invitation and training, I learnt forging by restoring historic objects for some of Santa Fe’s many museums.’

Before long the family’s neighbours were bringing Joyce iron cast-offs – ‘Spanish colonial era miscellany, iron objects from old wagons, parts of farm tools that were brought up from Mexico in the mid-19th century’ – to transform it into useful appliances. By 1976 he was exhibiting work and now, some four decades later, Joyce is a MacArthur Award-winning artist whose work can be found in 30-plus public collections across the world. This year he is presenting his largest solo exhibition to date: *Everything At Hand*, which runs at the Center for Contemporary Arts (CCA) in Sante Fe until December 31,





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Left: *Thicket II* in process – one of 23 clusters of stainless steel and cast iron elements assembled into a constellation for the *Everything at Hand* exhibition.  
Top right: *Lignifact I* in process (forged stainless steel)



featuring vast pieces weighing up to 21 tons made from cast iron and forged steel, as well as a series of metal-themed multimedia installations.

Fiercely cerebral and pleasantly effusive, Joyce – who divides his time between Belgium and the United States – is effusive, to say the least, about an exhibition which the *Wall Street Journal* describes as ‘a love letter to abstract shape, paying homage to forebears dating back to Brancusi’, and which acts as a retrospective of his entire career to date. ‘The title of the exhibition, *Everything at Hand*, references that first hammer placed in the palm of my hand when I was 14 – which in theory continues to shape the work 45 years later,’ he says. ‘The Tank Garage space at CCA was once a storage and maintenance facility for military tanks, so it had most of the infrastructure necessary to support heavy objects without any problems. The exhibition features over 225,000 lbs of forged high-carbon and stainless steel sculpture. It allowed me the freedom to build new spaces, create new work and penetrate walls to mount sculptures unsuitable for temporary installations in commercial gallery venues.’

These include *Tenet* – a title derived from the Latin *tenerē*, ‘to hold’ – for which Joyce 3D-printed working tools from his workshop in clear polycarbonate: in a darkened room, they hang upside-down, LED-lit from within. Another, titled *Tc*, (*Curie Point*), is an inverted studio installation in which obsolete blacksmith’s paraphernalia – tools, jigs, fixtures, artefacts, working drawings, patterns, clay models, prototypes, mementos from mentors long deceased, books, knick-knacks, signage – also hang upside-down from the ceiling.

The concepts struck Joyce while he was in his Brussels studio. ‘In Brussels, I’ve chosen not to replicate my Santa

Fe metalworking studio – I design, draw, edit videos, process photographs, model clay in preparation for future forgings, and generally give space for ideas to germinate. It was there that an idea came to me: what about devoting a section of the studio space to tools I no longer use, but were at one time critical elements in the production of the work, and turning the whole thing on its head? Imagine a child looking between their legs and seeing the ceiling upside down for the first time – all those things that used to be easily at hand being just out of reach – and seeing an entirely new world even though it’s the same environment?

The piece provides, in his words, ‘a foundational metaphor for the exhibition. The name is derived from the temperature blacksmiths quench forged iron tools to harden them before tempering. ‘When steel, at 1,417°F (770°C), is cooled rapidly in water, atoms violently contract and realign, becoming extremely hard and brittle. The atomic spaciousness found at the ‘Curie Point’ temperature – where steel loses its magnetism, where attraction and repulsion flux, where softness and hardness converge, where creation and destruction are possible – this is where the material processes and ideas I tend to work with emerge.’

Elsewhere, attendees will find *Bloom IV* and *Bloom V*, clusters of rounded blocks in a glowing Martian hue, rising from a bed of pebbles. *Datum I* and *II* are large concave and convex discs in austenitic stainless steel, treated to have what Joyce calls a ‘charred wood effect’. For *Thicket II*, meanwhile, stainless steel rods have been threaded through the handle-holes of hammerheads, clustered using CTI scanning and computer software animation, giving off the effect of 23 starbursts frozen in time.

The scale of some of the works is hinted at by the fact

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Below left: drafting  
studio window ledge  
with a row of Dogon  
spindle whirls (Mali,  
West Africa), clay  
models and found  
objects. Below right:  
Tom holds a cast-iron  
sculpture from an  
edition made in 2002  
on the one-year  
anniversary of the  
9/11 attacks on the  
World Trade Center





Left: *Divided IV* in process while applying patina to its cast iron surface. Above right: Joyce with *Bloom V*, a forged high-carbon steel, nine-part sculpture weighing 12,163kg



that Joyce spent five months working from the crack of dawn until midnight, using cranes and forklifts, setting up the exhibition. Showing his knack for the molecular as well as the colossal, though, are multimedia pieces such as the *Well* series of dye sublimation photographs on aluminium, in essence the canvas on which to show the microstructures of heavy oblongs of iron.

The large iron pieces for which Joyce is best known would not be possible but for his having been granted permission to use a state-of-the-art forging facility near Chicago, where he has worked since 2003. 'It's a rare opportunity,' he says. 'I was originally allowed access only due to the merits of my previous work and because of my training as a smith – being an artist alone would not have encouraged them to welcome me. Working with a skilled team, I'm able to operate as if working in my own studio, but with access to furnaces, hydraulic presses and tong-like manipulators with capacities far beyond my professional means.'

The heat provided there – 2,600°F of it, should he

need it – offers exciting creative possibilities. 'These are temperatures not unlike what meteoritic iron experiences when ablating through Earth's atmosphere, shedding skin from friction. From the outside, most steel looks smooth and homogenous, yet when it expands from heat and shrinks from cooling for hundreds of cycles, its inherent grain structure is exposed from fatigue. Industry tries to avoid these effects, but for me, these are properties in the material I want to exploit.'

The Chicago facility even provides Joyce with his basic raw material: ingots of specific alloys used for the company's contract work. 'I pull these remnants out of circulation, fully aware that they're inextricably linked to what I consider the parent material they originated from,' he says. 'For me, it's not about using leftovers for the sake of recycling – it's about that material's connection to a manufactured component, churning away somewhere in the world, performing an indispensable task: building our cars, taking us into space, extracting natural resources,



Left: Joyce under the portal of the adobe and mud-plastered studio he designed and built with friends and family in 1986. Right: studio shelves with prototypes, models, sand moulds, plaster patterns and cast-iron sculptures, *Core VI* and *Core Negative III*



producing electricity, weaving our clothes, processing our food or defending our borders. The factory is a microcosm of massive global consequence, and by chance I'm able to keep my finger on the pulse of global economic and political conditions that, in part, drive this industry.' Naturally, hefty confidentiality agreements are in place – and honoured – when it comes to the industrial processes Joyce witnesses going on around him.

Recent public commissions Joyce has undertaken include *Two to One*, seven forged stainless steel sculptures for the Museum of Arts and Design in New York, and the prequel piece to the aforementioned *Thicket II*, which can be found at the Mint Museum of Art, Charlotte, North Carolina. But the public work with which Joyce has surely forged the closest emotional attachment comprises 10 words fashioned from forged steel sourced from the World Trade Center wreckage, spelling out a passage from Virgil's *The Aeneid*: 'No day shall erase you from the memory of time'.

Contributing to the 9/11 Memorial Museum in New York, which was opened in May 2014, was 'a tremendous honour' for Joyce. 'My daughters and I were staying in Chelsea when the World Trade towers collapsed, as my work was in a show opening at the Museum of Arts and Design the next day,' he explains. 'I accepted the commission to participate in the only way I knew how – by transforming a painful history through the structural material that would be forever associated with this event at Ground Zero. I wanted to forge the remnants of a tragic moment into a folded, reliquary-like remembrance, respectful of those who had lost their lives, while offering a piece [inspiring] quiet reflection.'

Joyce is vociferous about the need for further knowledge to inform his work. 'I'm always learning more, and it never

feels as though I've reached any plateau of understanding that can't be revisited,' he says. So does he expect his creative journey to come to a final destination? Is there such thing as a point of artistic fruition? He visibly blanches. 'Not for me. I can't even imagine that possibility!'

Hence, he likes to keep busy: he's taught and presented in over 100 institutions throughout the US, and travels extensively too, most recently to Togo, Benin, Burkina Faso, Mali and Ghana as part of his lead curatorial duties for a forthcoming exhibition, *Striking Iron: The Art of African Blacksmiths*, which will open in June 2018 at UCLA's Fowler Museum. 'Mine is a full life,' he says. 'I don't distinguish between work and other activities. There's no separation between the things I do inside or outside of making a livelihood. My wife Anne-Marie is an anthropologist and art historian – we share that world too, so there is rarely any downtime, and we prefer it that way.'

Were there more free time, it's likely he'd spend much of it dreaming up possibilities from emerging technologies: 'With 3D printing, the influence of this technology alone will dramatically change our world moving forward,' he says. And, for Joyce, technology is just the start of currently inconceivable possibilities waiting in the wings: 'It's phenomenal to learn that scientists at the Instituto de Astrofísica de Canarias have identified a new galaxy 10,000 million light years away, 1,000 times brighter than our Milky Way, that produces 1,000 suns a year emitting light brighter than any galaxy previously discovered,' he says. 'To imagine it didn't exist within sight of astronomers until July of this year reminds me of the importance of careful observation: both near and far, at all times.'

[tomjoycestudio.com](http://tomjoycestudio.com); see more exclusive images of Tom Joyce's work at [holeandcorner.com](http://holeandcorner.com)

*Stack V* (forged stainless steel, 124cm x 6cm x 55cm, 29,200kg) and *Berg XVII*, (forged high-carbon steel, 115cm x 160cm x 108cm, 5,922kg) are staged along the studio drive, for future installations

