Lionel March

(1934 – 2018)

Lionel March, scholar and artist, inspired generations of students and colleagues to combine the formal and the creative in planning and design. His contributions to theory and practice ranged from mathematics to painting, from computation to stage set design, from architectural history to architectural practice at its most daring; a modern Alberti. His career at the University of Cambridge in the Department of Architecture, in Canada at the Department of Systems Design in the University of Waterloo, in Milton Keynes at the Open University, in London at the Royal College of Art, and ultimately in Los Angeles at UCLA, was remarkable for his individual achievements, the research groups he established but most of all for his outstanding generosity in sharing ideas. Talking with Lionel made people think differently. His students and colleagues loved him for this generosity while university administrators were often exasperated by his mercurial mischievousness. His eye for the winner, in supporting new talent and new ideas in Design, was unrivalled.

Early Years

His early years growing up in Brighton and Hove were interrupted by a war time evacuation to Leeds where he remembered its black buildings, which must have seemed a marked contrast to the white stucco terraces at home. At grammar school in Brighton in his sixth form mathematics class, he wrote a paper constructing a new algebra. This eventually landed on Alan Turing's desk at Manchester. The personal letters from Turing to Lionel are a terrifically clear explanation of the general mathematical concepts into which Lionel's algebra fitted. You sense Alan Turing's generosity in explaining beautifully, essential mathematical ideas as well as his urgent support for growing talent; something that Lionel did throughout his life.

Lionel made his way to Magdalene College, Cambridge after two years National Service in the Royal Navy. He enjoyed this time immensely, valuing the hard work and comradeship. These were key features of life and work in his research groups subsequently. At Cambridge, studying under Dennis Babbage, another of the Bletchley Park codebreakers, he was captivated by H. F. Baker's comprehensive treatment of geometry but admitted to finding that his first year mathematics did not engage his creativity enough. He changed to Architecture in his second year and set about his lifelong journey to unify the formal and the creative. As President of the Cambridge University Opera Group, who were in the avant-garde of opera in the UK with a reputation for staging new work, Lionel designed sets for several productions. In 1957 its members formed the New Opera Company, presenting in their first season at Sadler's Wells, new operas including the first English production of Stravinsky's *The Rake's Progress* for which Lionel designed the sets. Lionel's story went that this creative summer in London meant that he missed the regular final exams back in Cambridge, but returning after the Sadler's Wells season to graduate first class. He continued painting and designing, including a series of book covers for Cambridge University Press paperbacks and notably *The Elements of the Topology of Plane Sets of Points* by Max Newman, Turing's colleague at Bletchley Park and Manchester. Rules determined grid proportions, colours and overlaps in this abstract composition, particularly apt for the topic of the book.

Early Career

On a Commonwealth Fund Fellowship to the US at the Harvard MIT Design Centre in early 1960s, he worked in many media including film, studying Frank Lloyd Wright, and travelling extensively in the US compiling material for a PhD thesis, which was cut short by an offer from Leslie Martin in 1963 to develop proposals for a plan for Whitehall. Throughout his time in Cambridge, Lionel had been thinking about architectural and urban form and he was engaged to provide the formal and rational basis for Martin's plan published in 1964. Lionel analysed the requirements for this new national centre for the Civil Service, generating proposals for spatial layouts and overseeing the printing of the report in its large A3 landscape format. The story goes that

one night he was locked inside the HMSO Chancery Lane offices absorbed in layout and design. This total concentration on the task in hand; design, calculating, painting, talking, and listening; powered Lionel through a large and disparate portfolio of duties and activities.

Lionel, now just 30 years old, flowing with new ideas worked in Leslie Martin's office, where his ideas again came to the fore. The St Cross and Balliol graduate accommodation, across the road from the English Faculty Library in Oxford, has a symmetry and back-to-front plan which always seemed to me to have Lionel's signature.

Academic Career

In 1968 he was invited to set up the Centre for Land Use and Built Form Studies (LUBFS) at the Cambridge Department of Architecture. He set about formalising possible built forms, in particular comparing grids of courtyards with pavilion configurations. He explored building in lines not 'blobs', analysing layouts in terms of energy, daylight, transportation and amenity, with his growing team. A substantial programme of research resulted in a wealth of publications and PhD theses.

Lionel's group were early pioneers of computational methods and a spin-out company Applied Research Cambridge (ARC) commercialised these ideas with great success. This was one of the first such enterprises in Cambridge, now the premier hub for applied sciences from which such spin-off companies have emerged in the UK, and underlines Lionel's pivotal role in shaping both pure research and its pathways to professional, commercial and social benefits. The broad scope of this work was beautifully presented in *Geometry of Environment* (1971) with Phil Steadman, Lionel's colleague at Cambridge and subsequently at the Open University. The approach at LUBFS was not without its critics concerned that the beauty, value and humanity of architecture might be compromised by rules, mathematics and computation. Meanwhile, in 1974, Lionel, took a position as Professor of Systems Design at the University of Waterloo in Canada, a leading centre for computer modelling, combinatorial mathematics, and for design and systems science.

Lionel's fourth decade from 1974-1984 showed him at his most brilliant, brave and vulnerable. He embraced new mathematics in systems complexity, entropy, computation and logic for planning and design, establishing, as founding editor, *Environment and Planning B* in 1974 (EPB), a journal which has published the very best of latest research for over 40 years. It is the point of reference for scholars and students in spatial modelling and design generation.

Between 1976 and 1981, Lionel held the Chair of Design at the Open University in Milton Keynes. There he assembled an international group at the Centre for Configurational Studies. He put his heart and soul into the OU, still young as an institution, being immensely generous with his time, talking about new ideas in Design, seeking new ground in his synthesis of the formal and creative, alongside service at the research councils and other advisory roles. Lionel was instrumental, with the mathematician Robin Wilson, in developing the hugely successful cross-disciplinary course, *Graphs, Networks and Design* which has been presented continuously at the Open University, with necessary revisions, for over thirty five years.

His book *The Architecture of Form* (1976) which he edited with a wide range of contributors began with his own ground breaking article 'The Logic of Design and the Question of Value'. This raised the hackles of his latent critics. Lionel was far above this fracas; he was exploring ideas and how they work, not prescribing answers, and he had more interesting things to do.

The flow of papers in EPB was demonstrating that generative and computational methods were revolutionising Design principles and practice. Again Lionel led from the front. For example, at the Open University, a project with George Stiny and Ramesh Krishnamurti delivered a general shape grammar interpreter, implemented on one of the first VAX computers in the UK, for which Lionel secured funding. This interpreter remains a key reference point in Design Computation today, with generative methods ubiquitous in architecture schools. In everything he did in this period, Lionel went out and made the future.

In 1981 Lionel was appointed Rector at the Royal College of Art, perhaps seeing this as a chance to locate this revolution on a world stage. But Lionel was vulnerable, without a research group to constantly renew his energy and momentum. His ideas for the methods and institutions of research did not land on fertile ground, at the time, but they are now established at Design Schools around the world.

Lionel's next two decades, 1984-2004 were spent at UCLA. He taught and talked to great effect, painting and writing across a huge range of topics including his book, *The Architectonics of Humanism* (1998), which complemented Wittkower's renowned work fifty years earlier. Lionel was fabulously generous in Los Angeles, welcoming guests at the How house, a Rudolf Schindler masterpiece in Silver Lake. I remember when visiting California on holiday with our youngest daughter, Lionel and Maureen celebrated her thirteenth birthday with us and their grandson Tyler, who was completely charming and clearly destined for great things, with a Sunday brunch at a one-time sound stage on Sunset, entertained by a jazz band of senior ladies.

Retirement

In 2004, another decade and another place, saw Lionel and Maureen retire to Stretham, near Ely. He kept talking with colleagues and continued publishing and painting with several series of algorithmic digital works. Lionel travelled in retirement with a special love of the Greek island of Lesbos. Sadly, Maureen passed away a few years back and Lionel relied increasingly on his children and carers. Everybody loved Lionel. One of Lionel's last excursions from home was to the Martin Centre 50th Anniversary celebration. He was excited about meeting colleagues from his intellectual adventures. Lionel was kind and generous; in between orders for more coffee, lighting the fire or putting him to bed. His daughter Candy was with him when he breathed his last, in peace.

Chris Earl

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