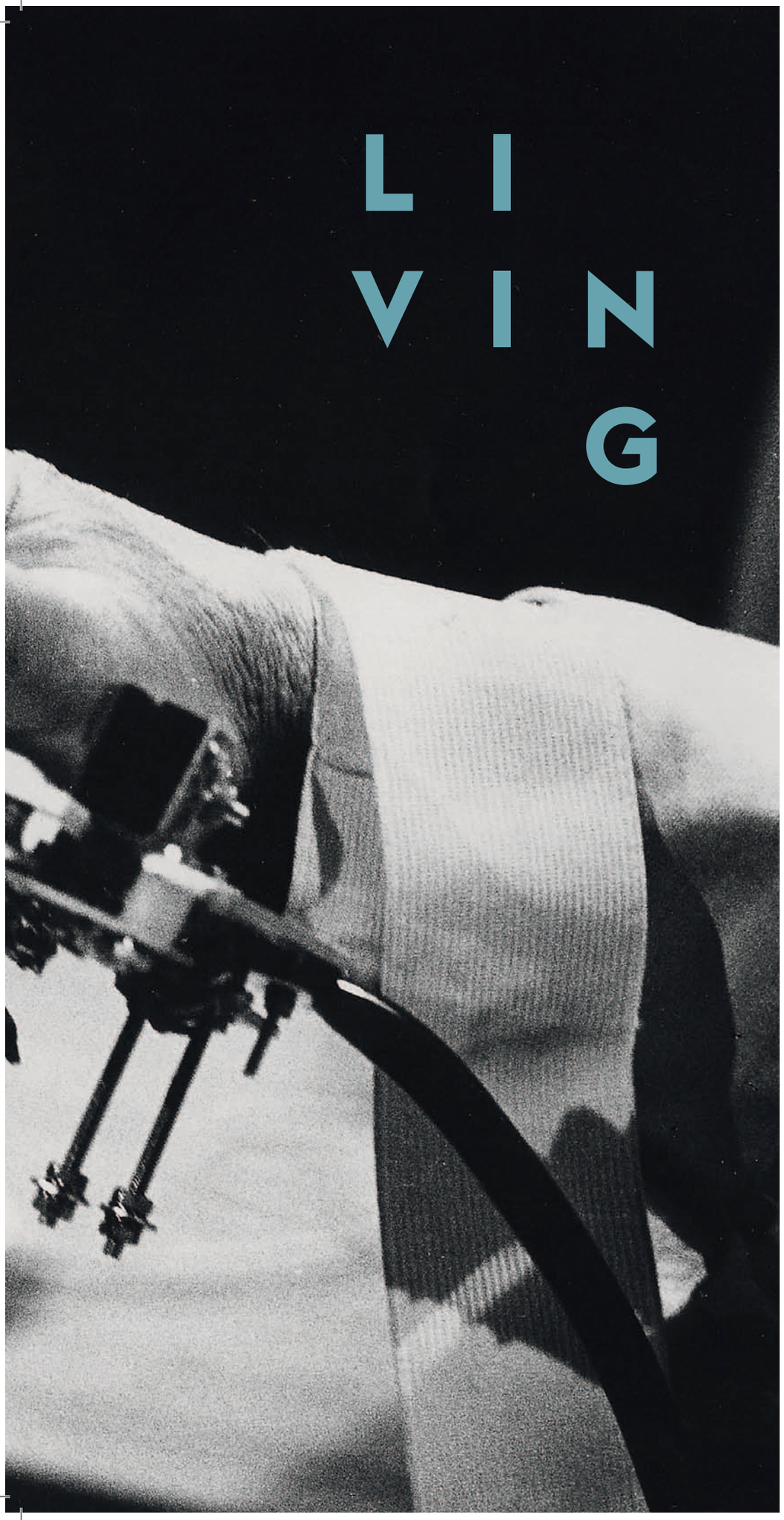
MACHINES FOR

You need Hands: a performance interface designed at STEIM, 1984



Over the last four decades, Amsterdam's **STEIM** organisation has brought together composers and technicians to imagine music's future and invent the interactive tools to realise it. **Will Montgomery** finds out what's next for an institution under pressure to profit from its legacy while keeping its cutting edge keen

On a hot night in Amsterdam last summer, the stage at the STudio for Electro-Instrumental Music (otherwise known as STEIM) is dominated by a hooded figure playing a long, fluorescent light-tube as if it was a stuttering *Star Wars* light sabre slicing through the darkness, sound crackling in and out of it. The tube is fitted with various triggers and hooked up to an array of effects pedals, so the performer, Atsuhiro Ito, is capable of bringing great rhythmic and tonal variation to the growling hum which his sensors extract from the bulb. Midway through the set, Ito triggers a pounding Techno beat from his drum machine and everyone cheers. The days when this venerable Dutch electronic arts institution was thought to have an aversion to repetitive beats are clearly long gone.

The annual STEIM summer party is partly a commemoration of Michel Waisvisz, the charismatic figure who led the institution from the early 1980s until his death in 2008. On this occasion it is also a farewell to departing artistic director Takuro Mizuta Lippit (aka DJ Sniff). Tonight he showcases his turntablist chops, working with a single deck, mixer, hard drive and a custom-built interface. His set-up, which he handles with incredible dexterity, is a good example of the performative use of technology that has been STEIM's raison d'être since Waisvisz took over in the early 1980s. Sniff's own project is archaeological, reaching back to the first and second generation European improvised music sounds that were in the air when STEIM was conceived. He subjects phrases culled from old discs to super-fast live editing, pulling fragments into a buffer and looping, processing and layering them. (His technique can be heard to good effect on his Evan Parker archive-mashing album *EP*, released on the Psi label in 2011.)

Each in their own way, Sniff's and Ito's performances relate to the history and values of STEIM: its roots in research and experimentation; its commitment to new uses of technology; its ability to stay in touch with the improvised and electroacoustic soundworlds that

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STEIM's most recent director, Takuro Mizuta Lippit

"How can we make new instruments that we can rely on – something as stable as a guitar or saxophone?"

Takuro Mizuta Lippit

fed into the institute's 1960s origins; and above all its fascination with the spectacle of the performing body. The concert space is small but packed to the gills. In between sets, some punters find their way to the basement, where there is an exhibition of exotic old equipment excavated from STEIM's past. A sense of relief pervades the event. Against all expectation, STEIM had recently learned that its funding would not be withdrawn. The European arts funding climate is so gloomy that even the 40 per cent cut in funds that was eventually announced seemed worth celebrating. After the night's music was over, the talking and drinking went on for a long time.

The next day, Mizuta Lippit talks to me about the background of the organisation he is leaving, some seven years after he started as an intern in STEIM's hardware workshop. While he sees the 1990s as a key period in the institute's development, he views the introversion of much 1990s electronica performance with great suspicion. "With the early laptop stuff, where you had a guy behind a glowing Apple logo, music and performance were really separated," he remarks. "You had this fantastically expressive music, but the most unexpressive person behind it. We try to connect the two. It has to be a good show, not just a demonstration. It has to be something that the performer can only do with the particular instrument or technology that they have. As a performance it has to have a sense of clarity of intentions, which is often unclear with the laptop. A lot of music and computer technology is not really developed with live performance in mind. So the focus here at STEIM has been on how we can make new instruments that we can really rely on – something as stable as a guitar or a saxophone. That's been consistent over the 45 years. That's what drives the people that come here."

In the STEIM view, most digital technology is poorly adapted to the expressive potential of the musician's body. Machines designed for office environments or studios are just too clunky for the urgent time-sensitivity of the performative moment. There's always been a tension in the history of avant garde music between the intuitive immediacy of the improvising musician (the freedoms encouraged by jazz, Improv or visual scores) and the otherness of numerical information encoded into sound (serial music, computer music, Cageian chance procedures). What STEIM does is on the borderline between body and data. The task that the organisation sets itself is that of the interface: how to reconnect the human body to sound making in the digital era.

A 1998 manifesto produced to coincide with a STEIM festival sets out the position clearly: "The STEIM Touch Festival focuses on electronic instruments that are not the product of technological fetishism or idealisation, but are tailored to the skill and imagination and expressiveness of a performer – in other words, to thoroughly embodied human intelligence. Touch advocates an idea of performance in which the physicality of the encounter between artist and audience is essential. Touch vindicates the central position of the human element in the electronic arts, and the necessity to place technology at the service of the creative individual."

Much has changed both within and without STEIM in the 15 years since that text was produced, but it remains on the institute's website as a statement of intent. The human-centred views it puts forward continue to define its activities, despite the different emphases encouraged by a succession of creative directors. Nothing could be further from the cyborg fantasies at the heart of Techno, the dystopian violence of Industrial music, or the euphoric post-human futurism of the electronica moment. According to STEIM's Kristina Andersen, who runs the education programme, new electronic instruments should be comparable to conventional ones – there's more to playing them than pressing a space bar.

"The musicians we like the best are the ones who develop a really strong connection with their

Jaap Scheeren

instrument," she asserts. "It's lovely to see someone develop an intimate, sensual, instinctual relationship to what is essentially a series of knobs and sliders. You get to the point where the interface is so well known to you that you reach a level of virtuosity. No one would think of asking you to do a concert after six months of playing the violin. The traditional instrument learning process works through muscle memory, mental re-mapping and developing a complex understanding of sound and music. All this takes a long time to build up. It's very easy to invent and build a fabulous new interactive instrument but you have to remember that there is this extended learning process. Otherwise it becomes musically less interesting. Then there is this performative thing that is more than you and your instrument – this other thing that is created in collaboration between you, the audience, the sounds and the acoustics of the performance space. That's what we're looking for. That's a quality we like. It's the live moment. It's knowing when."

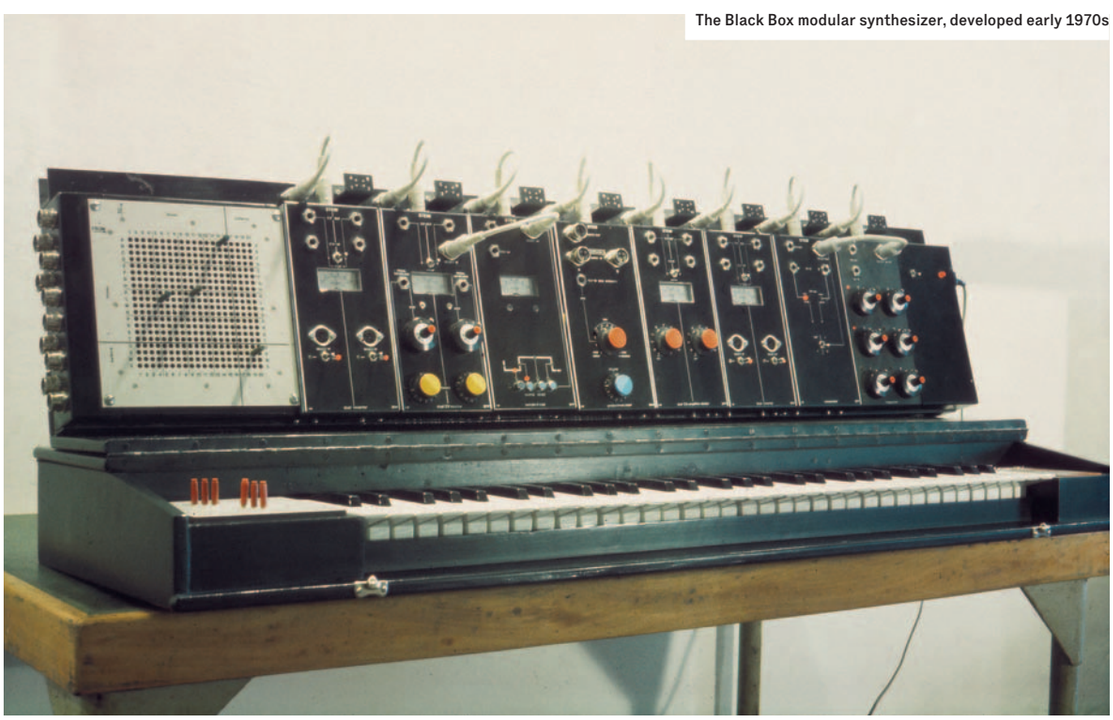
Ever since its inception in the late 1960s, STEIM has reflected contemporary debates about the purpose – even the possibility – of a musical avant garde, running the gamut from the severe byte-worlds of electroacoustic music to the approachable electronica of Mouse On Mars, whose Jan St Werner was STEIM's artistic director from 2004–06. Whatever the shifts of direction, there's been a visible desire to be flexible and open to reinvention. Employing only a few full-timers, the organisation is not a heavyweight art/music funding sponge in the IRCAM mode. Neither is it an academic space, a commercial venue or a fully commercial developer of mass market software or hardware. The distinctive commitment to physicality and interactivity in performance has, across and beyond generic definitions, given it a well demarcated space in contemporary music.

"We try to focus on the embodied interface," explains Andersen. "There are a lot of places in this world that will teach you SuperCollider. It is not necessary for us to do this. What we're good at is having an ongoing conversation with a particular person about how their performative goals, their musical goals and their instrumental goals may work together. The difficult thing about building your own instruments and your own software, which are two sides of the same thing, is that you can get caught up in the technicalities. I like to think that what we try to do is to get a balance between what the instrument does and what it does for the performance. How do these two points inform each other? It's what you do with it on stage that counts."

The seeds of the organisation go back to 1967 and the coming together of a loose confederation of radical composers, musicians and writers interested in technology: Louis Andriessen, Dick Raaijmakers, Misha Mengelberg and Peter Schat, among others. The group staged an opera on Che Guevara two years later. The production was a success and STEIM (STudio for Electro-Instrumental Music) was set up as a state-funded foundation in 1969, with the aim of offering studios, equipment and technical support to artists. The organisation was run, like many others, as a loose collective in the 1970s. Much of the work carried out was tape based and electroacoustic. There was a parallel focus on the development of homebrewed hardware such as the Black Box modular synthesizer. In 1975 came the Crackle Box, an erratic noise making device that produced sounds in response to direct pressure from the fingertips, using the body to complete an electronic circuit. The instrument is still sold today by STEIM.

Towards the end of the 1970s, the original members started to disperse. STEIM had served its purpose, some argued, and it should be wound up. Others from outside the group had a different plan. Michel Waisvisz, an artist who worked with electronics, was one of STEIM's main clients in the 1970s. In 1981 he became artistic and general director. He remained a key figure, shaping the organisation's movements until his untimely death four years ago. Although his own work has never been widely disseminated, Waisvisz was clearly a charismatic presence, eager to embrace both the new digital technologies and the radical energies of improvisors such as Derek Bailey, Steve Lacy and Evan Parker. Waisvisz set the organisation on an internationalist track, looking outside Holland for most of its visiting artists. His focus still draws criticism in Amsterdam, but the organisation quickly established itself as an international hub for experimentation: down the years Laurie Anderson, Lev Thérémin, Peter Greenaway, Karlheinz Stockhausen, Robert Henke and DJ Spooky have all visited STEIM.

STEIM is based in two townhouses on parallel streets running through a once bohemian, now gentrified district on the southern edge of central Amsterdam. Backing on to one another, the houses are joined at ground floor level. Each building is tall and narrow-staircased. One is given over to admin space and hardware and software workshops. There's a public performance space and a custom-built studio on the ground floor connecting the buildings. The basement houses a remarkable archive of early STEIM gear, one-offs and analogue synth museum pieces. The other building is dominated by STEIM's guesthouse. Cutting the expense of putting up visitors in hotels, the guesthouse completely changes the economics of inviting artists. One of Waisvisz's innovations was to bring in a series of artistic directors for longterm residencies. Among those who visited in the late 1980s were George Lewis, Clarence Barlow and Joel Ryan – all of whom used computers to make music. Lewis was working on his pioneering Voyager



The Black Box modular synthesizer, developed early 1970s

software for live performance, and Barlow on his AUTOBUSK compositional package. US composer Joel Ryan, who specialises in interactive uses of digital technology, remains at STEIM to this day.

STEIM's distinctive commitment to physicality emerged under Waisvisz's stewardship. Waisvisz himself was active in developing Hands in 1984, a pair of hand-worn frames containing MIDI controllers connected to various sensors. At about the same time, STEIM developed SensorLab, a small computer that made possible the real-time translation of sensor data into MIDI. This meant that synths or samplers could be played with physical movements captured by sensors measuring speed, angle, pressure and so on – these parameters could be used to affect any MIDI-controllable parameter on a musical device.

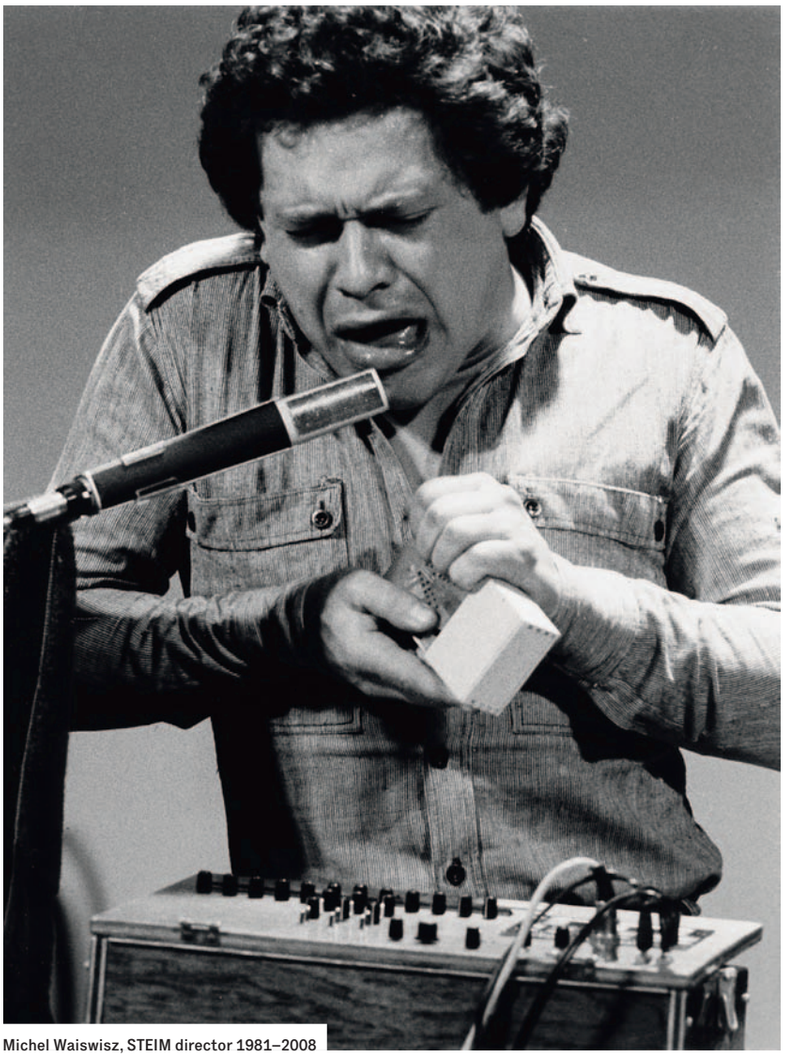
"SensorLab was the most sophisticated hardware system we ever built," explains STEIM software engineer Frank Baldé, who has been here for 25 years. "There are quite a few people around the world still using it. It was very complex but extremely reliable. It never crashed. It was a device you could hook up to a huge array of sensors. The biggest problem was that it was very expensive – more than what you pay now for a really nice laptop.

"In the early 1990s computers got faster and a lot of people started to buy computers instead of music hardware," he continues. "So we decided to stop the SensorLab thing. Michel got interested in samplers, but he found them quite limited. When the PowerPC arrived we found it was fast enough to process CD-quality audio in real time. That was when we started making experiments with Macs. In 1995, Michel and I went out to think about stuff on the beach. There was a strong wind. After that we had tea. I would say 90 per cent of our LiSa [Live Sampling] program was developed in that one afternoon. The whole concept was based on Michel's desire to sample and manipulate high-quality sound live on stage."

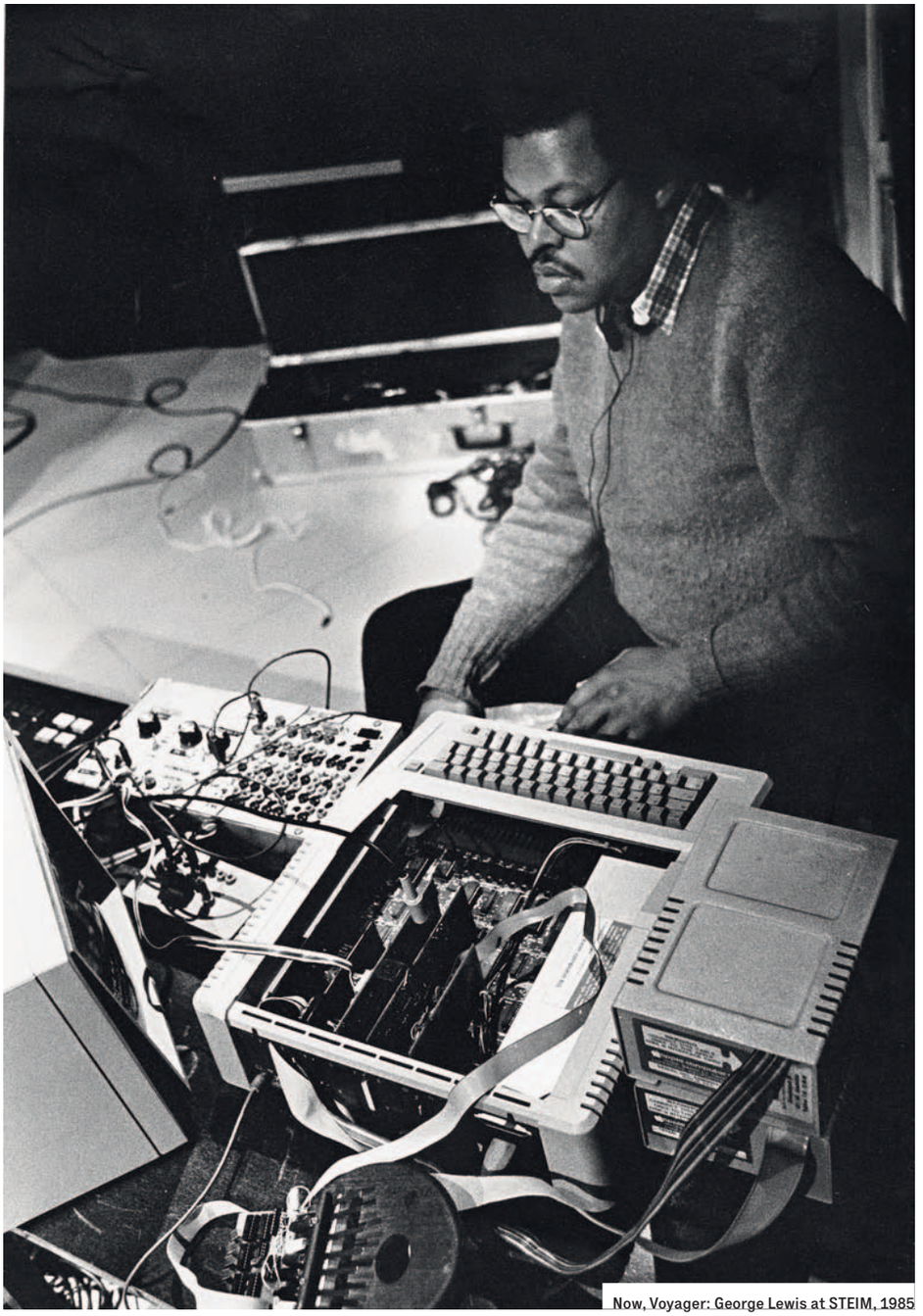
One of STEIM's most influential artistic directors, Nic Collins, confirms the importance of Waisvisz's creative ambitions to the trajectory of the organisation's research. "Much of STEIM's software and hardware sprang from Michel's brainstorming and specifications, as appropriate for his own music," he recalls. "During my tenure with STEIM, his Hands devices were the driving force behind the development of the SensorLab, the Lick Machine sequencer and LiSa. But he was very generous in sharing this technology with all the visiting artists and encouraging the incorporation of their suggestions in product design. Even when Michel pulled back and brought in a co-director like myself, he remained involved on multiple levels, from R&D to festival rubrics to ministerial contacts – it was his expertise in this latter area that kept STEIM alive through multiple economic crises. It was a highly symbiotic relationship that spanned decades."

STEIM's change of direction in the 1990s owed a great deal to the arrival of Collins from the US. He did a long residency in 1988, and others in 1989 and 1991. His training with Alvin Lucier and involvement with the improvisors of the New York downtown scene gave him the breadth of musical experience and the contacts to commission boldly. He was artistic director for three years, moving from NYC in 1992. He expanded the residency programme (up to 50 artists per year), organised the annual three-month in-house concert series, curated outside projects in Amsterdam, Europe and the US, and supervised research and development.

"The focus during the first half of the 1990s was on alternative musical controllers, primarily MIDI-based," Collins writes. "Since I had developed a number of oddball hybrid instruments on my own in the 1980s – trombone-controlled DSP, backwards electric guitars – this was a natural area for me to direct research.



Michel Waiswisz, STEIM director 1981–2008



Now, Voyager: George Lewis at STEIM, 1985

"When you build your own instruments and software you can get caught up in technicalities. It's what you do on stage that counts"

Kristina Andersen, STEIM

Laptops were big and primitive at that time, and didn't do real-time audio, so most musicians hooked up to MIDI gear. STEIM had a nice interactive sequencer called the Lick Machine, and an early motion-tracking program, Big Eye. By 1995 Macintosh computers caught up and STEIM starting developing LiSa."

UK sound artist Kaffe Matthews was a prominent early user of LiSa. Her performance work with the software is documented on a series of solo CDs issued in the late 1990s and early 2000s (she now tends to work with multichannel installations and performance projects). Encountering the first versions of LiSA during a residency at STEIM in 1996 overturned her musical practice. "I'd spent three years grinding away with a MIDI violin system, which meant that I could only go on stage with pre-prepared material," she explains. "Encountering LiSa suddenly allowed me to improvise, to work in the moment, which musically was what I was fascinated by. At the time I was completely inspired by the idea that the moment of performance is a unique one; that this audience is gathered at this moment in this space – that *this* is never going to happen again. And I wanted to use those ingredients to make music. I worked with this idea for years, actually. LiSa was like, bang! Christ! Suddenly I had this tool that was going to enable me to do that. It was one of those epiphanic moments when doors fly open. I had this huge studio and 24 hour access. I was in there for a month and I never came out. Such a privilege to have this huge space and this bit of software to get inspired by – the possibilities seemed endless. Control and no control and continuous discovery. I shot off on this trajectory that still now keeps me more than happy and always – blimey – always learning. That, yes, really was the beginning of my musical journey."

STEIM's research and development work fed into music made by a very diverse array of experimenters worldwide. SensorLab users have included – besides

Gerda van der Veen, courtesy STEIM archive

Waisvisz – Laetitia Sonami, Jon Rose and Franziska Baumann. Musicians who have worked with LiSa include Rose, Bob Ostertag, Ben Neill, Richard Barrett and Daniel Schorno (who still works for STEIM). "The 90s was the highlight of STEIM's history," says Mizutпa Lippit of this period. "It now had products that it could sell and an international community of artists who were just dying to come to STEIM. Technologically it was unique, and artistically it was unique too. If you had an idea for making a new instrument, this was one of the few places you could come and realise it. So STEIM had this aura that attracted people. STEIM became somewhat academic in the 1980s, and then in the 1990s there was a new flow of artists coming from different areas – hacker communities, for example – non-academic technological people. The 1990s was really when the gates opened and people really heard about STEIM."

However, even at this period STEIM was never just about music. One early experiment used a dancer's movements to generate sound via sensors embedded in a dancefloor. Collins's successor – first-generation video artist Steina Vasulka, who took over in 1996 – developed the Image/ine software: one of the first real-time video processing packages designed for live performance. Her period at STEIM led to a broadening of the organisation's performative embrace to include installations, video art and live art.

In the first half of the 2000s, STEIM's artistic directors were very different in outlook: the controversial net artist Netochka Nezvanova, Jan St Werner of Mouse On Mars, and composer Daniel Schorno. According to Mizuta Lippit, though, STEIM was losing its way a little. It had failed to pick up on open source development. Its proprietary products were becoming too expensive. Competition from the big name commercial audio software houses and the availability of the new dirt cheap Arduino interface both hit STEIM. At the same time, the organisation came under increasing pressure from critics. There were funders, on one hand, who saw the organisation as elitist and too experimental; on the other hand, some musicians saw the hiring of St Werner as a capitulation to the mainstream.

Waisvisz decided to bring in St Werner after seeing Mouse On Mars at Amsterdam's Paradiso. In St Werner's account, the STEIM boss was drawn to the roughness and immediacy of the Mouse On Mars sound, finding in it an energy that STEIM had perhaps been missing. St Werner's approach certainly went against the organisation's grain. "STEIM's credo had always been hands on, to do things in real time, immediacy," he recalls. "My idea was to infiltrate the real-time dogma and translate it to listening rather than playing. I told Michel that music to me happens in the brain not when you compose or perform it. The idea was to shift the focus from the performer to the listener and from that idea came the installation of the noise room, a 5.1 listening space that we built in STEIM's performance studio. People would come and sit down and listen to prerecorded musical sessions in a surround sound environment. It was quite a change for STEIM's followers but it worked out. Another series involved juxtaposing young non-academic performers with visual artists to transform the concert night into a social event including a bar and drinks and hanging out in front of the building. I was also linking self-taught musicians with the STEIM workshop to build new instruments. My own project was a drum machine which could sample and shift the beats to create wonky ever-changing rhythms. We got to make a prototype but never finished it."

For St Werner's successor Mizuta Lippit, it was becoming clear that the relationship between the R&D workshop and artists needed to become deeper and more sustained. "The successful projects were the ones in which we established a longterm relationship with the artists," he says. "This required the artists to be interested in the process of instrument design or have an affinity with the technology, otherwise they would be too frustrated by the tedious process or just simply lose interest and move on to another idea. That's what led to my approach of trying to find artists that saw instrument development as part of their musical practice – something that they felt essential to the music they make and not just the means to achieve an effect or functionality."

This is the model that Mizuta Lippit sought to establish during his period as artistic director. In his view, STEIM's very success in adapting to changing environments has led to a longevity that sometimes sits awkwardly with the search for new ideas. In other words, STEIM's relationship to its own past came to present a problem in itself. "STEIM is in a weird place, because it's funded to be innovative but it's a historical place," he says. "So we were always caught in this dilemma of being a historical innovative lab. Some parts of the community wanted us to be an archive focusing on the past. The other part wanted us to do new things. That's always the dilemma. The artists that we got were never big names, but the funders wanted us to do bigger projects."

In recent years, the organisation has become more active in education. STEIM runs a series of workshops and has set up a collaborative MA with the Royal Conservatory in The Hague. The institution also runs a bold series of weekend workshops for children – teaching under-tens to solder circuits and to build instruments such as simple synths and electric banjos made from drink cans. On another front, it is much more active in documenting its own activities. Mizuta Lippit made a number of radio shows that showcase the work of earlier generations at STEIM, and he initiated a video archive.

"Part of my job was about the community around STEIM," he observes. "The community that was coming to STEIM was professional musicians, people who were professional teachers or designers; and then there was a vague community who were connoisseurs of experimental music, who were just plain curious. It wasn't a general public who would come to see a concert, but people who were interested in the whole package and the process of how this music was made and performed. We needed to build this community and then redefine STEIM's place within

Nic Collins's Trombone-Propelled Electronics device, early 1990s

The Crackle Box, one of STEIM's most successful products

"I had this huge studio and 24 hour access. I shot off on a trajectory that still now keeps me happy"

Kaffe Matthews, former STEIM resident

it. Now organisations with overlapping interests are much more visible – a hacker group in Berlin that has a website, or a university department in Denmark that is doing similar instrument design, or an instrument design lab in a workshop in Japan. All these nodes were becoming more visible when I started here. All these people knew about STEIM from the history and that was what we had to capitalise on. We had the history. So it was about how to connect these and make STEIM a stronger node within this network. We dropped the idea that we had to be technologically innovative. We had to focus more on how the technology was used and build on our experience with interactivity to provide a platform for the best new work through curation and programming."

The problem has been how to pursue these aims in an environment in which market-oriented values are so pervasive. STEIM has been under constant pressure to make itself accountable to agendas that are alien to its values. Everyone I meet there is uncompromising about experimentation and committed to maintaining the organisation's dynamism. Everyone also knows that it will need to keep changing if it is to stay afloat. "As I see it now, the direction and general attitude of STEIM will not change in the near future," says Kristina Andersen. "We are absolutely entering a period of experimenting with ways of working due to the funding cuts." STEIM has no immediate plans to replace the departed Mizuta Lippit. "For now artistic decisions are handled by an informal artistic board," says Andersen.

Mizuta Lippit believes the current crisis is symptomatic of a Europe-wide shift. "Maybe this is the collapse of a certain period of funding," he suggests. "Many artists have already left Amsterdam or have moved to other cities or have given up filling out application forms. It feels like office work and it takes away from the time to develop what they want to do. It's like this everywhere in Europe. Maybe we are coming to a turning point in how art and culture is funded. Perhaps this fantastic model is dead. For the Japanese and Americans, Europe was such a utopian place. Now nobody can tour any more in Europe. You only have big festivals and you need to be a big name to be flown over here. For a touring musician you can't make ends meet any more, even though you have so many networks on the internet. So I think the real challenge both for artists and facilitators is to think: how do we organise again?" ☐ steim.org

Jaap Scheeren