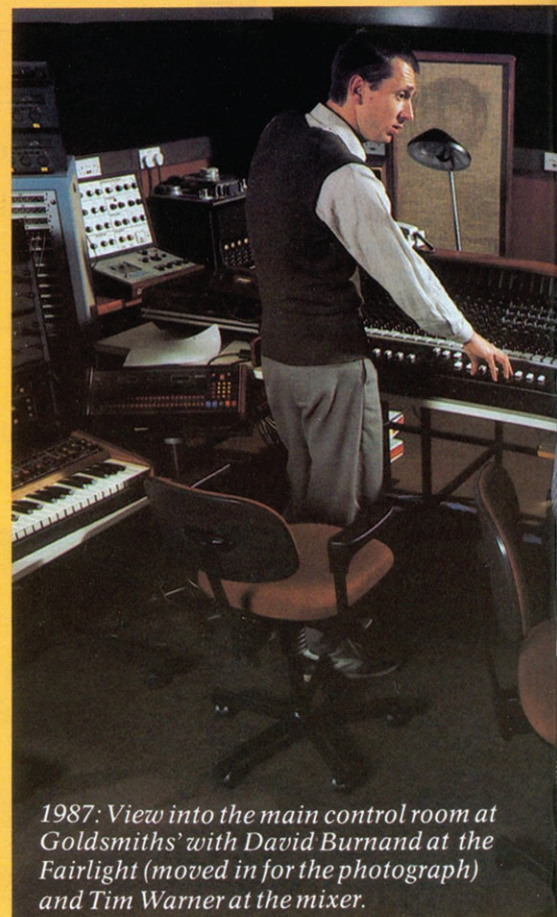


Goldsmiths' College was the first higher education institution in this country to set up its own electronic music studio and offer a course. Current teaching staff David Burnand, Hugh Davies, and Benedict Sarnaker explain how things were back in the Sixties and how the studio and courses have successfully advanced to cope with educational cut-backs and musical life in the Eighties.

The Goldsmiths' College studio began in a very modest way with a few items of equipment in December 1967, and an evening class in electronic music the following January. This, by a small margin, was the first such facility in any institution of higher education in Britain

(soon followed by York University and the Royal College of Music in London). The instigator of the studio was Stanley Glasser, then the Head of Music in the Department of Adult Studies (and subsequently in the Department of Music). For some time he had had the intention of setting up a studio at Goldsmiths' College and when Hugh Davies, recently returned from working in Germany, France and the United States, approached him in the autumn of 1967, Glasser invited him to teach a class in electronic music. They emphasized the importance of students doing practical work, therefore money was found to acquire some basic equipment. This included two Revox G36 tape recorders, a Quad II/22 amplifier (all powered by valves), a Uher A121 5-2 battery-operated mixer, and a couple of microphones. Shortly afterwards the new Revox A77 and a Heathkit sine/squarewave valve oscillator were added. The students, who included three up-and-coming composers Don Banks, Anthony Gilbert and David Lumsdaine, had one lecture each week and a practical session every fortnight.



1987: View into the main control room at Goldsmiths' with David Burnand at the Fairlight (moved in for the photograph) and Tim Warner at the mixer.

ELECTRONIC MUSIC STUDIO

GOLDSMITHS' COLLEGE UNIVERSITY OF LONDON



1968: Hugh Davies with equipment in a typical setting.

Hugh Davies was well informed on the history and repertoire of electronic music but his practical experience was very limited. He chose equipment because he was familiar with it and other composers had used it. He managed to keep a few steps ahead of his class in technical matters by learning from the equipment as he went along. For the first two terms everything was stored in cupboards in a physics lab and had to be set up and put away for the two sessions every week, but by the autumn of 1968 a ground floor was made available at the end of a row of small terraced houses recently bought by the College.

"The need for such a course is obvious given increasing technical demands, the difficulties of in-service training (despite the commendable work of certain studios) and the appalling turnover of assistant engineers."

DEVELOPMENT

During the 1970s the studio expanded very slowly, often obtaining only one or two new items each year, such as an Astronic octave filter, another A77 and one of the first EMS VCS-3 synthesizers, while Davies constructed some very simple processing devices such as ring modulators and wave-shapers. Various people contributed to the studio's technical development and gave classes while Davies remained part-time director, coming in for half a day per week. Despite much creative activity the



studio at Goldsmiths' was being overtaken by other, newer studios around the country. By 1979 it was about tenth in an equipment 'league table', but in that same year the fortunes of the studio began to change...

Through good fortune and the vigorous lobbying of senior staff the studio benefitted from two 'windfalls'. Firstly, between 1979 and 1981, we were able to replace a small custom-built 10-4 mixer with a 24-8 Chilton model (although initially we could only afford modules for 16 channels), a Studer B67, one of the very first one-inch Soundcraft 8-track tape recorders, the start of a now substantial Roland 100-M modular synthesizer, several Wasp and Roland SH-101 synthesizers, more filters (octave, one-third octave, band-pass and parametric), a digital delay, Publison pitch shifter (the first in the UK), ETI vocoder, various microphones and two channels of Dolby A noise reduction. The members of one of our several evening classes also constructed a 32 channel sequencer for the studio. The second windfall provided our first entry into digital synthesis, with two (and later on a third) Apple II/alphaSyntauri synthesizers and a Fairlight Series II.

In addition to considerable expansion and being one of the few university studios to possess a Fairlight, we have managed since 1979 to develop other important aspects. A full-time technician was appointed (Richard Guy, a former Goldsmiths' music student) and the first steps were made towards designing and building a complex of studios within the College.

During 1979, Davies and Guy drew up plans for a two-storey building on a

small site next to the end-of-terrace houses which contained the studio. Their plans included converting the existing studio room as well as the rest of that house and an adjacent one. When the stage of discussing the exact positioning of lights and power points was reached, the government froze all educational building projects. A long saga ensued, camping out in a lecture room for a couple of years (whilst the building conversion was carried out, leaving even less studio space!), finally culminating in the autumn of 1985 in a new complex of rooms converted from lecture, practice and store rooms into a substantial control room, four smaller studios (one dedicated to the Fairlight, another housing the Apple systems – all linked to the control room), a technician's room, tape store and equipment store.

The slow increase in the size of the studio meant that those who worked there during the 1970s were able to learn the capabilities of each new item extremely well, and although this could not be compared with the expertise that our students acquire today, it was sufficient for them to create works of their own and to assist a variety of other composers in producing pieces in the studio. We have also collaborated with poets, sculptors and film makers.

Care in selecting new items of equipment has meant that no money was wasted on 'white elephants' and we are still making great use of some equipment that is more than ten years old. Among our 'classics' one could include various Revox models, VCS-3s, various Quad amplifiers, Tannoy loudspeakers (Monitor Golds), and the Fairlight. Recently we have acquired more synthesizers, primarily Yamaha (DX7), Roland and Casio models. In 1979 we seriously considered the Sony PCM recording system, but were not convinced that our recording needs warranted it, and instead put that part of the budget towards two Revox B77s.

With the Fairlight we had some initial problems because it had to be housed in a large store cupboard with inadequate ventilation and no window, so that it often tended to overheat, unless the user had already abandoned the space for the same reason! For a time we were known as the "only studio with a Fairlight in a cupboard". Hugh Davies is currently writing a *Beginner's Guide* for the Fairlight to help students avoid the often frustrating problems of understanding the manufacturer's own manual.

TEACHING

In preparation for new courses in *Popular Music Technology*, the studio was able to purchase a second DX7, Roland TR707 drum machine, Brooke Siren Systems DPR 402 compressor/limiter/de-esser, US Audio Gatex noise gates, and a range of microphones from the AKG D112 to PZMs. These, together with the more recent acquisitions of Jellinghaus MIDI sequencing software for the

Commodore 64 and a Roland SBX-80 EBU timecode reader/generator, widened the educational and creative potential of the studio to include contemporary pop music and recording techniques. The growth of this resource and increasing demands on its use have resulted in the recent appointment of a full-time director, David Burnand, the post being co-funded by the College's Department of Music and the Department of Continuing Education.

The studio has always attracted a wide range of interests and the courses on offer reflect this. Future events include a Saturday School this February dealing with the theory and practice of digital sampling (from Fairlight to Mirage). In the summer there will be a series of intensive courses covering many aspects of synthesis, recording and musical applications of computers such as the Yamaha CX5M. Amateurs and professionals alike attend these courses and there is a notable increase of

"...we try to deal with principles rather than fashion, giving students the preparation for a wide choice of careers lasting a lifetime, not just the next two years."

interest from teachers preparing for the new examination schemes and contemporary demands of pupils. The full-time trainee teachers in the Music Department are also encouraged to work in the studio, recording backing tapes for school visits and gaining familiarity with drum machines, portastudios and synthesizers. Our enviable resources, by educational standards, constantly increase demand from schools, educational authorities and other music colleges to make use of Goldsmiths' facilities and expertise.

Part-time students on the *Certificate in Musicianship* course have the opportunity to take a composition and recording option during the final (third) year and are required to prepare a portfolio of multitrack recordings. Intensive training in the areas outlined below is followed by supervised access to the studio during weekday evenings:

Use of tape recorders (including 24-track), mixing desks and microphones

Dynamic processing and noise reduction

Programming analogue and FM synthesizers

Operation of Fairlight CMI

Natural and artificial ambience featuring Yamaha REV-1 and REV-7

MIDI sequencing and timecode featuring Commodore 64 with Jellinghaus software and SBX-80.

Apart from course fees students only pay for tape and floppy disks, but acceptance onto the course depends on proven musicianship and creativity. Some twelve out of thirty applicants are selected each year and their music ranges from pop through video soundtracks to 'experimental'. A

◀◀ compilation tape is issued each year to help maintain standards and disseminate students' work.

Full-time students on the London University *Bachelor of Music* degree course may take the *Electronic Music* option during their second year. Taught practical sessions covering the areas listed above, together with lectures on the history of electronic music, are combined with supervised access to the studio during the daytime. These students are required to produce three essay-type assignments and two practical projects, the latter normally being tape or live electronic pieces lasting five to ten minutes each supported by details of aims and methods used. Past students who have taken this option include Jonathon Sorrell who was featured in the March 1986 issue of *Sound On Sound* for his programming work with the Synclavier.

It is hoped that, at some future date, Goldsmiths' College will be able to offer postgraduate degree courses in electronic music and new practical skills for music teachers. Meanwhile, we await validation of a new course entitled *Certificate in Recording Studio Engineering*. It will be one year part-time and provide a structured introduction to the role of the balance engineer. The need for such a course is obvious given increasing technical demands, the difficulties of in-service training (despite the commendable work of certain studios) and the appalling turnover of assistant engineers. Following a two week induction period, successful applicants

will be sent to professional studios for work experience, returning to College one day a week for further training. The course will run in association with several studios concerned about the training of personnel and it is intended to be self-financing from student fees and sponsorship from the industry in the form of bursaries. In the long run it will save the recording industry money and we are expecting a great deal of interest.

"The Roland SBX-80 has found an unusual application in logging gated pulses keyed by percussion music being analysed by Music Department ethnomusicologists."

GOALS

In all of the studio courses here at Goldsmiths' College, we try to deal with *principles* rather than fashion, giving students the preparation for a wide choice of careers lasting a lifetime, not just the next two years. With music technology changing so fast educational establishments cannot hope to keep up with commercial leaders, but this has the positive effect of forcing staff and students to use depth of understanding and ingenuity instead of merely hiring the latest piece of equipment. For example: our Fairlight's lack of MIDI/SMPTE implementation was solved at a fraction of the upgrade cost by using the CMI to click-control the

Roland SBX-80 timecode reader. Full synchronisation with MIDI-driven devices is achieved with just two sync tracks on the multitrack, one for the Fairlight's tone and the other for the EBU timecode. Timeslips do occur, but are easily remedied by going back to the Fairlight and dropping-in the sequences against the sync tone.

The Roland SBX-80 has found an unusual application in logging gated pulses keyed by percussion music being analysed by Music Department ethnomusicologists. Unfortunately, the 25 frames per second resolution is not always accurate enough and we are now looking at MIDI software as a solution. Ethnomusicologists also make very good use of the Publison DHM 89B2 as a digital pitch-shifter enabling half-speed replay of programme material at the original pitch to facilitate music transcription.

During academic 'down-time' the studio is available commercially, though we are treading carefully in this area because of the danger of encroaching on the main tasks of education and training. However, as the financing of education appears to grow bleaker, income generation will be a useful means of topping up the budget while offering an exciting interface between students and professionals.

SOS

Further details of all studio/music courses mentioned can be obtained from David Burnand, University of London, Goldsmiths' College, New Cross, London SE14 6NW. Telephone 01-692 0211 or 01-692 7171.