

# AudioMedia

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## TOP-GRADE STUDIOS

Exploring the world of educational recording facility design

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NYU Steinhardt Dolan Center 3D Audio Experimentation Suite. Pic credit: Cheryl Fleming /courtesy of WSDG

## SECTOR FOCUS: EDUCATIONAL STUDIOS

The companies that design commercial facilities are often the same ones that work with educational facilities, so how do some of the major players in the field feel about the current state of the facilities available in educational environments? **Stephen Bennett** reports.

**A**lthough the inexorable march of technology has rendered many commercial studios redundant, the requirement for high quality facilities for recording, dubbing and mixing is, if anything, more prescient due to the current explosion of the requirements for content. At the same time, the burden of training has mostly moved from the studios themselves to bespoke educational facilities that are required to train and develop the next generation of audio professionals.

David C. Bell is managing director and principal acoustic designer at White Mark Limited, a UK-based company who design pre- and post-production studios for the audio, video and broadcast industries, including educational facilities at Nottingham and Nottingham Trent Universities and the Liverpool Institute for Performing Arts. He says that while signal processing algorithms and digital audio processing have been developed to help design studios, the fundamentals of acoustics have not changed over time.

"Measurement equipment and its ability to help

visualise the acoustics of a space have improved enormously, but the basic acoustic theory that underpins room design has not altered," he adds. Bell believes that there has been far too great an emphasis on equipment as the main constituent of a studio: "One of the principal problems with public sector purchasing is that this focus on equipment purchase can push out the requirements for good room design."

John Storyk founded WSDG (the Walters-Storyk Design Group) after a successful career working in the field, including the design of Jimi Hendrix's Electric





The James L. Dolan Music Recording Studio at NYU Steinhardt. Photo credit: Cheryl Fleming

Lady studio in 1969. WSDG now field a global team of over fifty expert acousticians, designers and project managers and boast a client list approaching four-thousand projects, ranging from Jazz At the Lincoln Centre, educational facilities for universities and studios for Bruce Springsteen and many other leading artists. Storyk believes that the main innovations in studio design has been the introduction of computer predictive acoustic design and measurement tools.

"We have also entered an era of very affordable and extremely accurate pre-fabricated acoustic treatments," he says. "This is particularly exciting for low frequency control, which is critical for small rooms and the higher first order eigentone fundamental frequencies –aka 'standing waves'."

Justin Spier, managing director at Studio Creations and Chris Walls, founder of Level Acoustic Design specialise in the design and installation of high end music, film and broadcast studios for clients including Abbey Road Studios, Coldplay, Warner Music Group and ITV.

"We have investigated most things which look like they could be of use to us as designers, such as Boundary Element Modelling (BEM), room acoustic prediction programs and active absorption, but nothing has truly revolutionised our process," says Spier.

"We primarily rely on acoustic theory and a huge

database of test results - fortunately the laws of physics and the human auditory system have been reassuringly consistent for the last decade." Spier says that most technical innovations have been equipment-based which doesn't fundamentally change studio design—with the possible exception of facilities for immersive audio formats such as Dolby Atmos and Auro.

Andrew Muro has a long career in studio and loudspeaker design and is and is currently owner of Munro Acoustics and Form and Funktion. "Studio design has evolved in line with the developments in both technology and economic reality," he says.

"In the sixties studios broke away from the model that relied on major labels for funding and centres of excellence developed, often with a distinctive style and sound, often more by accident than design. For whatever reason places such as Nashville, Memphis, Chicago, Los Angeles and London all became synonymous with a certain quality of both music and sound."

Munro says that even though the business of recording sound has been changed out of all recognition, at the heart of the process there is still the same need for places to record in such a way as to produce content that translates to the real world and that can be appreciated at every level.

"Now big studios are closing and the economic model is completely different," he says. "In my world, fundamentals still apply though and nobody can change the laws of physics. Everywhere sound is getting better at the point of delivery and yet there is a propensity to downgrade the very places where the audio is produced. I have heard the words such as 'bedroom' and 'garden shed' in the context of acoustic environments, with the conviction that anything can be produced anywhere thanks to the miracle of plug-ins and laptops."

Peter Keeling, MD and founder of the Studio People, began his move into acoustics and construction twenty-five years ago and now handles high-end projects, many of which are new-build Educational facilities.

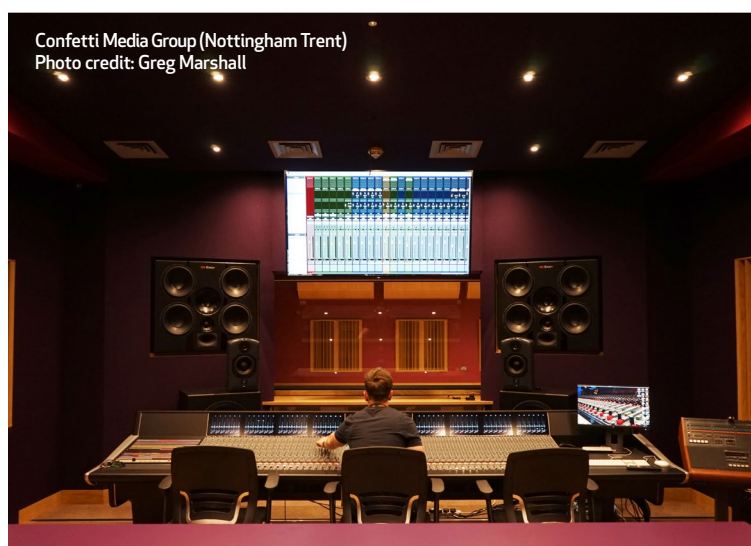
"I am often asked how educational studio design differs from commercial applications. The short answer is - not at all," he says. "Our approach has always been to service the educational industry with exactly the same performance and design effort as we do with our commercial and private clients."

Bell says that the ability to make recordings and perform mixing, editing and arranging on computer equipment has led to an explosion of output but a significant reduction of recording budgets which has hit the recording studio market hard. "The limited quality at which most audio is now monitored has also served





Nottingham University



Confetti Media Group (Nottingham Trent)  
Photo credit: Greg Marshall



Studio Creations-built Elwick  
Road Studios at Ashford College

to reduce the perceived value of good quality sound recording at the outset."

Storyk says that the WSDG team collaborates at the nexus of architecture and acoustics. "We consider these two design elements as fundamentals of a process, which fully integrates both disciplines. Our design axioms and our passion for innovation has not changed," he explains.

What does change, he adds, is technology and how studio design reacts to these developments. "Studios have been particularly accepting of digital technology solutions, a movement which has resulted in smaller equipment footprints and a more democratic and unified equipment canvas."

Storyk says that what continues to differentiate one studio from another is the architectural and acoustic design. "I always opt for educational studio environments that, as closely as possible, replicate what students will experience when they leave school."

Keeling says that his company works hard to put the message across that you generally only build a room once but equipment is constantly under review for upgrade or workflow change. "The challenge is to put across the technical and acoustic differences to the people that control the budgets. In commercial and private builds these are often the same people that use or manage the facilities—though this is rarely the case with education."

Spier says that the technical design process hasn't really changed at Studio Creations. "Our work is grounded in science and engineering principles," he says. "We appraise each project's technical requirements and design a solution to satisfy them. The main changes in our process have been about the look and feel - we try to make our studios look as good as they sound and to move away from panels-on-walls or swathes of bland fabric. There are a few US designers who do this very well, but not so many in the UK."

In a commercial environment, where studio design costs are met by the fees charged to clients, the funding for educational facilities is often more complex and challenging, as is creating an environment that 'looks and feels' like a commercial facility but is also suited to the specific requirements of teaching.

"The fundamental issue is the need to offer higher numbers of seats within the teaching spaces," says Bell. "This adds further complication when the representative audio field has to be extended as far as possible whilst still offering accuracy in a given room."

He says that there is no point in trying to discuss equalisation or dynamic range control in a space where these are masked by anomalies inherent in the design. "Similarly, how can microphone technique, musician placement and recording, particularly of the voice, be

taught in a room that strongly resembles a bathroom?"

He says that the fundamental challenge in the educational field is that reputable studio designers are often not consulted and the whole process is undertaken against a specification drawn up by those without knowledge of the needs of the users.

"Often, the only specification of performance is set out in building regulations documents that set ridiculously low targets for isolation and poorly defined figures for reverberation time, monitor quality and so on. We have campaigned on these matters, issuing a letter co-signed by some significant industry figures decrying this state of affairs and have also made comment on the specification problem in a review of the issued standards."

Spier believes that educational facilities should not differ at all from commercial facilities— the technical requirements are exactly the same. "As for any studio, you need good sound insulation to ensure the studio can function without disruptive noise, the aircon systems need to work at low noise levels and the room acoustics need to enable accurate monitoring and provide a great recording environment," he says.

"The notion that any one of these elements is less important because the studio is 'only for education' is completely wrong," Spier says that this appears to be a common view though and his company has recently



declined work because of it - "the biggest challenge is, ironically, educating the client," he adds.

"I think that there are a number of very dedicated professionals working in the educational environment that are saddled with very expensive poorly-designed facilities that must give them continuous challenges," says Bell. "I also worry that there is no really effective way for students entering this field to assess the quality of the facilities that they are being offered, particularly

when the choosing their university."

Keeling says that the educational studio industry, is very buoyant though. "I am seeing a continued improvement to this new build sector and I feel very confident about the future of media in terms of improved and expanded facilities for Schools, Colleges and Universities, along with some good projects coming from commercial media training organisations."

Munro believes that truly great sound can only be created by inspirational musicians in an environment

that is conducive to the production of balanced and fault-free media.

"Education in sound requires more than a grounding in ProTools or Logic and technique is still at the core of any skilled work in the studio," he says. "A well-designed studio allows faults to be heard and great sounds to be honed. There is no basic reason why a studio today should really be any different than one designed in 1969 - only with less hessian."



**Studio Creations and Level Acoustic Design** were engaged by Ashford College to design and build their new facility at their Elwick Road Campus in Kent (pictured, left). The studio comprises a control and live room and recording booth, with the capability for full band tracking, mixing and production. Mark Rowden, studio manager and lecturer at Ashford says that the studios are a fantastic facility. "These are such a versatile resource - for the students to study audio production as part of their Music Technology diplomas, to allow us to run adult part-time evening courses as well as operating as a fully-fledged commercial recording facility. This gives the students the best possible start to their careers both academically and vocationally." Situated on the third floor of the building with staff offices next door and classrooms directly below, the sound insulation performance was key to ensuring that the studio can operate without disturbing staff or lessons. "On completion, our testing found there was no audible noise transfer to the adjoining spaces under normal operation," says Studio Creations MD Spier.



Jon Thornton (pictured, left) is the head of sound technology at the **Liverpool Institute for Performing Arts (LIPA)**, a specialist higher education institution co-founded by Sir Paul McCartney. "As well as offering degree courses in music, dance and acting, LIPA has an equal number of students studying subjects such as audio engineering and production. "We were convinced from the outset that we needed professional level studios - not just rooms with equipment," says Thornton. "The idea being that that is all of these disciplines only make sense when working as a collaborative whole." The facilities were developed by Harris Grant Associates (HGA) where David Bell (now of White Mark) was then employed. "When I joined the project in early 1995, a variety of consultants had already been involved to greater or lesser degrees, but the studio spaces had been incorporated into the main building contract," he adds. "It was clear that, although well-intentioned, the approach taken by the main contractors and architect wasn't really going to deliver the facility we needed or wanted." Thornton says that HGA were appointed because of their track record, and their willingness to work on complex multi-room facilities. "Although the technical installation in every studio has been through at least three major upgrades since it was built, the bones of the studios are still going strong" says Thornton. "HGA, encouraged us to get things right in the first place, even though this meant spending money on things you can't actually see."

Greg Marshall is the director of operations for the **Confetti Media Group**, a unique collaboration with, among others, Nottingham Trent University (NTU). A new contemporary music hub called Metronome is being designed by White Mark who say that its "scale and quality... should set a new level for educational facilities." The hub is part of a £12m investment for students studying audio and music technology, music performance and live and technical events. Alongside six studios, four edit studios and fourteen rehearsal rooms, there will also be a 350-capacity venue with a programme of publicly facing events. "We are aware that in order to attract the best students we would clearly need the best facilities. We would only get one opportunity to build a new facility and as such we knew that we could never compromise on the quality," says Marshall.

