



I had long dreamt of building my own recording studio; the idea had been kicking around for years since past experiences signing to Decca as a teenage bubble-gum pop prodigy. Decca's demise finished my early career path but with several recording sessions under my belt at the age of 13, and mixing with record producers, arrangers, session musicians and engineers, this left a lasting impression on me. Many people with a passion for music find themselves doing a daytime job to pay the bills while aspiring to a professional role in music or simply doing it for pleasure. That's me, a regular guy with a day job and an average wage but there is some depth to my musical resume, including performance, live sound engineering, DJing and music production underpinned by a HND in professional sound engineering. The opportunity for the studio design and build came about when I saw a freehold detached bungalow for sale that came with a lot of land and the owner wanted out, quick. It was perfect for development and was in a regeneration area with millions being spent knocking down buildings and rebuilding. Planners were keen for new ideas and it all looked good for my vision to be realised.

I purchased the building in 2001 with a standard mortgage and set about drawing sketches of different layouts to find a good working flow. It took another five years to find the courage to start the project. Borrowing more money to finance the build could potentially leave me having to sell the home if it all went wrong so the only way to afford doing a proper job was to carry out the design and build myself. It was all very scary — I knew I was handy at DIY, but we all think that!

In 2006 I submitted plans that were passed without problems. The key was to apply for planning permission for private residential use at first and to make a further application for change of use once the building was built and established. House prices were spiralling upwards creating equity in the property and I took the opportunity to remortgage £32,000 to start the build. I had a good idea of how the studio layout should look and what materials would be used for the build. I had several books for referencing design, but I kept going back to *Recording Studio Design* by Philip Newell. It was a favourite and essentially my bible of studio design.

Building work started January 2007 raining non-stop for a month, filling up the trench works and halting progress. I bought a digger and a small dumper for £5,000 to move materials around the site and complete the ground works, selling them afterwards to recoup the cash. By August the walls were going up and the whole building shell, roof and windows were completed by June 2008. I did all the work to keep costs down while continuing my full time job which was taking up 50-60 hours a week — building could only be done at weekends and a couple of nights a week.

The build was quite daunting at times; project managing, counting costs and redesigning plans as new information was found. I found it easier to complete small chunks of the build at a time, although there were some frustrations — suppliers were unreliable, things turning up late, substandard or unusable.

Further top-up loans of £50k and £25k were drawn down, putting me on the edge of maximum borrowing. My wife was made redundant, and so was I, three times! The lack of expendable cash and long hours working put a strain on our relationship too, no holidays or Christmas cheer. What had I done? Times were desperate, but there was no going back.

Building Summerfield Studios

Studio owner **PHIL CROFT** traces the development, opening and commercialisation of his self-built facility in Birmingham.

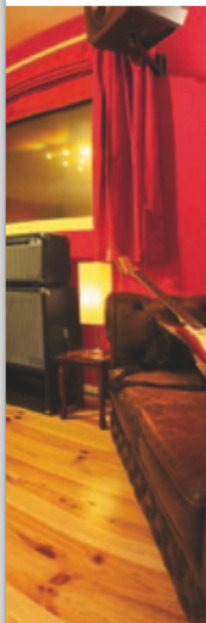
With the roof on, doors and windows sealed, it was time to get cracking on the internal structure. The first room finished would be the live room and I would soon hear the resulting acoustics. All studio areas were 'room within a room' designs for acoustics and isolation. The live room construction uses 215mm solid concrete blockwork between studios and 300mm concrete cavity walls externally. The brickwork was first lined with 30mm RW3 Rockwool glued to the walls; 100mm studwork was built and lined with dead sheet on the side facing the wall. A 12mm thick layer of EPDM rubber strip 100mm wide was glued to the bottom rail of the studwork panels. Once stood up, all the wall panels were coach bolted together to form the floating perimeter wall and in-filled with 100mm RW3 Rockwool, faced off with two overlapping layers of 12.5mm plasterboard. Eco joist Girder beams supported a web of timber joists to form the inner ceiling structure that sits on the perimeter wall to complete the shell.

The inner and outer ceilings are a composite layer of 100mm RW3 between joists, 12.5mm plasterboard, and then 30mm RW3 sandwiched with another 12.5mm plasterboard, separated by 150mm airspace. This was for each ceiling layer. The whole structure was sealed with silicon at every joint and layer to ensure the room shell was airtight.

The floating floor was a simple design of a 150mm reinforced concrete floor pad covered with 30mm layer of Rockfloor panels, 22mm tongue and groove chipboard flooring, 3mm layer of underlay and 21mm French Pine tongue and groove flooring, and a separate floating drum riser.

The walls and ceiling frames are coach bolted together. This floating structure is very strong and weighs several tons. A layer of deadsheet in the walls is sandwiched between two layers of Rockwool and acts as a limp membrane panel absorber to control sound reradiating from the concrete containment shell. The result is a very well behaved room acoustic with excellent sound isolation.

The live room was whitewashed initially with a view to revisiting interior design and décor at a later stage. Then November 2009 my father died. He was proud of my achievements, loved music but would never see the finished result. I put together a makeshift control room, linked into the live room and recorded my eldest brother Keith singing an acoustic version of *Dance with my Father Again*. It was appropriately the first recording in the studio so we played it at the funeral service.



SWEET SPOT



I continued to build the control room shell and decided to email Philip Newell and thank him for his fabulous book, which had influenced much of my work. I sent some build pictures too. He replied personally and advised me of some points that would improve my design, anomalies he had spotted in the pictures. We struck up an online friendship and he helped with queries and advised on the finer details of my design including the rear wall 'waveguide' absorber system and flush mounting of the Tannoy FSM main monitors ... ray-tracing the dispersion figures from Tannoy's quoted specs on the control room plans. This showed there were no significant early reflections that might colour the sound in the listening zone.

Philip was impressed with the control room air handling specification. It includes a Daikin fresh air heat exchanger linked by controller to a Daikin air conditioning unit with a total 9 x 1 m x 200mm steel silencers and 200mm flexible acoustic ducting to link all components. The result is excellent control of humidity and temperature with near silent operation. The whole studio is heat exchanged and air conditioned throughout.

The main monitors were flush-mounted into a sand-filled studded wall to reduce resonance and to maintain impedance matching of materials used in the acoustic shell. They sit on a concrete foundation the size of their footprint and are surrounded at the sides, top and rear with two 25mm layers of MDF bonded. The remaining void is packed solid with RW3 Rockwool to reduce any cavity resonance. They are decoupled from the wall, base and shroud with a 12mm medium density foam surround.

The walls are non-parallel throughout and a rear wall waveguide absorber system, as used in many of Philip Newell's designs, finishes the job of tidying up standing waves that might have occurred otherwise. The floor is split level and rises at the rear to give a listening experience similar to what is heard at the mix position. Large windows either side of the control room look directly into the live and dead room studios, giving an excellent line of sight throughout. The room has a very calm sound and feel, but it's not dead. There are many reflective surfaces... they're just not in the firing line.

It was decided early on to concentrate the design and budget on the building and acoustics, to start with a good foundation, and build a quality recording and listening environment. I researched constantly; looking at old and new recording equipment to compile a shortlist of reliable tried and tested gear that was good value for money without compromising quality. I bought a refurbished Soundtracs Jade 48 channel in-line after much deliberation. I'm really happy with the choice because it's got loads of personality, and it's a great production console to work with. It's interfaced to an eight-core Mac Pro with two 3GHz quad-core Intel Xeon processors. I use Motu 2408 Mk2 (two), Mk3 and 24 I-O, for 48 channels of A-D/D-A with Logic Pro 9. It's a classic analogue front end with a powerful recording DAW.

Some of the equipment has been around for years. I remember my earlier sessions at Decca and the fabulous sound of the Tannoy Gold Monitor speakers

used in the control room. In 1987 I saw an advert introducing Tannoy's 'new' FSM monitor — a 15-inch high power Dual Concentric with additional 15-inch LF driver in one cab... sold, to the man over there! I've owned them ever since and as Summerfield's main monitoring they are hooked up to a Neva Audio StudioV passive amp. Tannoy PBM 8s are closefield and AKG LSM50s are on the desktop.

With the completion of the control room in January 2011, I realised the project was taking on its own life and was starting to look special. The budget had gone out of the window, now it appeared I would have to commercialise the studio to take it to the next level. I had to move more quickly with finalising the remaining rooms but I was starting to feel the strain of constant work and was actually getting slower as I took more time to concentrate on the detail. I was under pressure financially due to constant disruptions of my employment, with redundancies and spells of sporadic employment.

It took another year to finish the studio and by that time I had hooked up with young graduate Dan Coley who came to the studio with a band. I instantly took to him and was impressed by his maturity. I gave him the opportunity to run some sessions and quickly realised that he had amazing editing skills and a profound knowledge of software. He's well organised, is skilful and has been a key player in developing the studio's operations. I believe that a studio is only as good as the engineers and staff who operate it and Dan is first class.

I attained commercial planning permission by Christmas 2012 and emailed Nick Young, MD at Miloco, with a view to be considered for their Marketplace portfolio. Nick replied saying he felt the studio lacked vibe and there was a list of things that didn't sound positive. He was right; I had overlooked the aesthetics and been a bit complacent about the finish. I set to work straight away; looking at interior designs from the best studio pictures I could find and started to see a pattern emerge. A complete refurbishment of the studio's lighting, décor and furniture has been well received and Summerfield Studios is now turning the heads of key industry professionals. We have become one of the new additions to the Miloco Marketplace portfolio.

The journey has been long and hard, and if I were to do it again, I would, of course, do it differently — take more time planning, costing, and making sure the finance was available. However, this was my dream, a vision turned into reality through guts, hard work and determination. There was only one chance and I was brave enough to take it and work hard to realise it. There really has been blood, sweat and tears...and a lot of luck! ■

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