



Smart Studio™

www.smartstudioinc.com

Acoustic, Technical, Financial & Environmental Briefing Document.



Introduction.

This document has been produced in order to provide interested parties with a full understanding of the concept behind the Smart Studio™ system. In conjunction with the various acoustic and technical aspects which go to make up the system, there are also other stakeholders who will have their specific question and views in relation to the procurement of new studio facilities. Key among them will be questions about the financial aspects of a Smart Studio™ proposal and given the heightened concern in relation global warming, environmental impact will also figure as an important issue. Other aspect such as Health & Safety will also feature in the decision-making process.

The Concept.

The driving ambition behind the Smart Studio™ concept is the desire to provide the professional recording, broadcasting and post production industries with an exceptional quality acoustic environment delivered in a timely and cost effective manner in which to complete their critical audio based projects.

Key to achieving a fully functional studio facility is the integration of all of the necessary equipment and services within the envelope of the Smart Studio™. This requires a fully integrated approach which includes for and accommodates all such necessary requirements.

The Acoustic Case.

The backbone of the Smart Studio™ system is excellence in acoustics. This refers to all aspects of the design including sound insulation, room acoustic conditioning and ultra-low background noise. Coupled with our custom designed BBX multi-channel DSP processor, Smart Studio™ provides for a fully calibrated and time aligned monitor speaker system for your critical control room requirements.

Sound Insulation. Sound insulation is achieved via the base room-within-a-room design which is the fundamental corner stone of the Smart Studio™ system. The standard wall modules are loaded with ultra-high density DMIP's (Damped Membrane Insulation Panels)



which range in density from 1,600Kg/m³ to 2,400Kg/m³. Using these revolutionary panels, the required levels of sound insulation can be easily configured to satisfy the specifics of a particular project. The isolated floor which is built on a series of ISO80 isolation pads provide the base upon which the modular Smart Studio™ system install. Typical floor build-ups provide for isolation down to 15Hz's which more than satisfies the most demanding of requirements. The ceiling is supported by the wall modules and is independent of the existing structural ceiling. Using specially designed ISOiBeam the Smart Studio™ ceiling detail provides for high levels of sound insulation plus a deep void/chamber for effective bass absorption down to 50Hz.

Room Acoustic Conditioning. The achievement of a balanced audio spectrum with an even RT time from 63Hz to 8KHz is a basic requirement for a professional audio studio environment. Failure to deliver on this objective is likely to lead to a distorted room acoustics which does not accurately reproduce the sound which are generated/created within the space. More over such rooms will be fatiguing to work in and may result in temporary threshold shift, a condition which can result in permanent damage to some operators hearing. This is a significant H&S issue which owners and management of audio facilities must be cognisant of. At best, temporary threshold shift will often result in the requirement to re-mixing audio passages as the operator's judgment will deteriorate over the course of the working day. All of this takes time which you will not typically be able to charge for and recover from your client. So there are no winners in badly acoustically treated rooms.

In contrast the Smart Studio™ system is all about the creation of a balanced sound spectrum. The depths of the wall module are calculated so as to ensure effective bass absorption down to 50Hz and up to 200Hz. The integration of panel membrane resonator which are tuned to various frequencies, provide for an even dispersion of bass absorption. This effectively avoids harmonically related issue further up the audio spectrum.

Providing for mid/high frequency absorption is generally relatively easy to achieve. However, the normal outcome is that too much energy is "robbed" from the room leaving it sounding dull and lifeless.



The Smart Studio™ system overcomes this all too common problem by facing some of the wall modules with Amplitude Diffusers panels called 2D-A-DIF's. These panels act by providing a subtle degree of amplitude based diffusion which helps to spread the acoustic energy within the room while contributing to a reduction/control in reverberation time. This is essential to create a balanced acoustic environment. By sustaining the acoustic energy within the Smart Studio™ room there is less reliance on having to “turn the monitor speaker level up” in order to hear the program content. Overly absorbent rooms “rob” the acoustic energy and place undue demands on the monitor speaker system and the amplifiers driving them. By injecting more electrical energy into the voice coils of the monitor speakers, they heat up and as a consequence move out of the optimal working range. This results in a non-linear response which produces a distortion in the sound. Not the environment your carefully selected and auditioned monitor speakers are designed for. Long term operation under such conditions may well reduce the working life of these expensive speakers and reduce their accuracy as they slowly fade in terms of performance. The impact is identical in terms of the amplifiers which power the monitor speaker drivers. As the volume is turned up to compensate for the destruction of mid/high frequency energy the complete monitoring system slowly tips into non-linear response/distortion.

In contrast the Smart Studio™ system is designed to deliver what we call “No Stress Engineering” solution. No stress on the operator, no stress on the power amplifiers and no stress on the monitor speakers. This results in reduced stress on the client, facilities management, administration and finance departments. It's the only way to live your life.

The Business Case.

The success of everything we do in business is measured through the prism of financial return. Therefore, the economics of a decision to develop a new studio facility has to be given due consideration at all times.



Time is money. The longer it takes you to bring your new studio facilities on-line the more money it will cost you. In capital expenditure, in income from work forgone, in rent paid during construction etc,. It is the role of every financial manager to avoid unnecessary expenditure by selecting systems and suppliers who can deliver their next studio project in the shortest turn-around time. By selecting a Smart Studio™ package you get your new facility operational in the shortest possible time, meaning you can better accommodate the needs of your clients. This contributes to your company's ability to generate income and ensure the necessary return on investment.

Leasing Option. Due to the modules nature of the Smart Studio™ system we have been able to negotiate leasing terms with a number of leasing company. Now you can pay for your new professional studio facility without the need to resort to your capital budgets. Simply pay for it out of your operational income/cash flow. No other professional studio system can offer this facility.

Accurate Project Costing. Because the Smart Studio™ system is modular it is possible to accurately cost a project and avoid the extras which often crop up in a traditional design/build process. Our detailed site inspection prior to agreeing final terms ensures that our contract price is fixed and will not change. Unless you make some changes yourself. This give you piece of mind and allows you to proceed with confidence in relation to the cost of your new studio facility build.

Re-purpose and re-use. Based on a modular design your Smart Studio™ facility can be re-purposes to suit your needs in the future. This level of flexibility is not available with any other professional studio design/build system. The ultimate in re-cycling capability.

The Environmental Case.

We live in a time of significant environmental pressure with the need to be more responsible in terms of energy usage and the generation of waste. Smart Studio™ is the ultimate in Green technology as its modular design allows for it to be re-used and re-purposed to satisfy current and on-going needs. The Smart Studio™ demountable design



means it can be re-sized, re-positioned or re-located as required.

Renewable and recyclable. Up to 50% of all materials used in the Smart Studio™ system are either sourced from renewable resources or manufactured from recycled products.

Minimise Waste. As the Smart Studio™ system is manufactured in factory environment, waste is kept to an absolute minimum. The efficient usage of materials contributes significantly to cost control. Given that up to 30% of material which is delivered to a conventional building site is taken away in skips to land fill, the economic and environmental argument for selecting a Smart Studio™ solution is unassailable.

Waste to Energy. The majority of waste material produced in the manufacture of Smart Studio™ modules is sawdust. By loading this raw sawdust into our compacting/milling machine we convert this waste product into wood pellets which are then used to fire home and industrial heating systems.

By selecting a Smart Studio™ system you display your genuine commitment to good CSR (Cooperate Social Responsibility) and the proactive protection of our precious environment.

Services & Engineering Case.

A key requirement of any studio is that it must effectively act as a host space for a range of equipment and service which are required to perform the function the space was designed and intended for.

Integrated Cable Ducting. To this end the Smart Studio™ system has been designed with integrated cable ducting for both electrical power cables plus signal and data cables. These ducts are part of the overall wall module design giving you easy access in terms of routing cables into, around and out of the studio.

This facilitates the ease of installation of all necessary cabling during the initial equipment fit-out and allows for system up-dating throughout the working life of the facility.



Ultra-Low Noise Air-Con. As Smart Studio™ facilities are highly insulated from both a sound and thermal point of view, it is always necessary to install air conditioning within the spaces. However, one key aspect of air-con which most M&E contractors are not always aware of is that the units in a studio must be ultra-quiet. Plus, they must also be correctly isolated from the room structure. It's more than simply about temperature and air changes per hour. The Smart Studio™ system accounts for such critical requirements by including fully decoupled ultra-low noise air-con as standard. No need to engage with an air-con engineer who has never worked in such a noise critical environment and may not fully appreciate the very specific requirements.

The Process.

The following is an over-view of the process of acquiring your new Smart Studio™ facility.

Stage 1. Initial Budgetary Proposal, you tell us what facilities you require and we will provide an initial budgetary proposal.

Stage 2. Firm Proposal, after a site inspection of the location of your proposed new studio facility provide you with a firm proposal for discussion and agreement.

Stage 3. Studio components are manufactured off-site and shipped to site.

Stage 4. Installation commences on site with the sequenced delivery of the various element and components on a just-in-time bases.

Stage 5. Acoustic testing is undertaken on site to confirm performance criteria. Optional speaker calibration and alignment is also available if required.

That's the process. So don't hesitate to contact us with your studio facility requirements and will get the process started with an Initial Budgetary Proposal, today.



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**Contact us today with your studio
facility requirements...**
