



**Smart Studio™**

[www.smartstudioinc.com](http://www.smartstudioinc.com)

---

# **Acoustic, Technical, Financial & Environmental Briefing Document.**

---



## Introduction.

This document has been produced to provide interested parties with a full understanding of the concept and advantages behind the Smart Studio™ system. It is designed to inform all stake holders (technical and non-technical) involved in the decision-making process of procuring and commissioning new critical audio studio facilities. Along with brief details on the **Acoustic case**, this document provides details on the unique **Business/Financial case**, the **Environmental case** and the **System Installation case** which Smart Studio presents.

---

## The Concept.

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

Our belief is that the key to achieving a fully functional studio facility requires the integration of all 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 processes, Smart Studio™ provides for a fully calibrated and time aligned monitor speaker system.

---



**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/m<sup>3</sup> to 2,400Kg/m<sup>3</sup>. Using these revolutionary panels, the required levels of sound insulation can be easily configured to satisfy the specifics of any/all projects.
- The **isolated floor** which is constructed on a series of **ISO80 isolation pads**, providing the base upon which the modular Smart Studio™ system is installed. Typical floor build-ups provide for isolation down to 15Hz's which more than satisfies the most demanding of requirements.
- The **ceiling** is built off the wall-modules and is independent of the existing structural elements. Using specially designed **ISOiBeam**, the Smart Studio™ ceiling provides for high levels of sound insulation plus a deep void/chamber for effective **bass absorption down the 63Hz and below**.

**Room Acoustic Conditioning.** Achieving 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 can lead to the following problems:

- **Distorted room acoustics** which do not accurately reproduce the sound which is generated/created within the space
- Room will be **fatiguing** for operators and client alike to work.
- Potential for **temporary threshold shift** can occur, resulting in permanent damage to an operator's hearing. This is a significant H&S issue.
- **Time lost**, as the operator's judgment will deteriorate over the course of the working day.
- Requirement to **re-mix** audio passages.



In contrast the Smart Studio™ system is all about the creation of a **balanced sound spectrum**.

- The depths of the wall modules are calculated to ensure effective **bass absorption** down to 50Hz and up to 200Hz. The integration of panel membrane resonators which are tuned to various frequencies, provide for an even and effective levels of bass absorption. **Smart Studio™ rooms do not resonate at low frequencies.**
- Providing for **mid/high frequency absorption** is 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 (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. This also contributes to a reduction/control in reverberation time which is essential for 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 as a result 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 therefore move out of the optimal working range. This results in a **non-linear response which produces a distorted sound**. Not what 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/deteriorate 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 performance zones.

The **Smart Studio™** system is designed to deliver what we call a "**No Stress Engineering**" solution. No stress on the operator, the power amplifiers or the monitor speakers. This results in reduced stress on the client, facility 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. Headings such as **capital expenditure**, **income from work forgone**, and **rent paid during construction** must be considered. By opting for a Smart Studio™ package you get your new facility operational in the shortest possible time. By enabling your bookings department to facilitate your clients recording, dubbing & mixing demands in a timely manner, the income generated ensures the **earliest possible return on investment**.

**Leasing Option.** Due to the modular nature of the Smart Studio™ system we have been able to negotiate leasing terms with several leasing companies. Now you can pay for your new professional studio facility without the need to resort to your CapEx funding. Simply pay for it out of your operational income/cash flow. **No other professional studio delivery system can offer this facility.**

**Accurate Project Costing.** Because the Smart Studio™ system is modular it is possible to accurately cost a project. This avoids the all too common “**extra charges**” 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. This gives finance peace of mind and allows you to proceed with confidence in relation to your new studio facility build and fit-out.

**Re-purpose and re-use.** Based on a modular design your Smart Studio™ facility can be re-purposes/altered 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.**

**Dilapidation.** Dilapidation costs can be a significant consideration when it comes to committing to a **new premises lease**. Moving premises is likely to include the cost of demolishing the audio studios you had designed and installed and re-instating a similar facility somewhere else from scratch.

Smart Studio™ can be dismantled and moved to a new site. Thus, you only incur a fraction of the expenditure you would otherwise require getting yourself up and running in your new location. Conventional studio design/build approach can never offer such a compelling and cost-effective argument.

---



## The Environmental Case.

We live in a time of significant environmental pressure which requires us all 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 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 conditions, waste is kept to an absolute minimum. This efficient usage of materials avoids unnecessary wastage at source which also 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.** Most of the 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 are displaying your genuine commitment to good CSR (Cooperate Social Responsibility) and the proactive protection of our precious environment.

---



## Services & Engineering Case.

**Integrated Cable Ducting.** To this end the Smart Studio™ system has been designed with Integrated Cable Ducting (ICD) 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 and out of the studio as well as around the internal perimeter of the space. 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.** Smart Studio will provide at no extra cost a technical review of the noise performance of the proposed system so as to ensure it achieve the targeted NR criteria. We will also accommodate the installation of the specified system within the envelope of the Smart Studio space.

---



## **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. Don't hesitate to contact us with your studio facility requirements and we will get the process started with an initial budgetary proposal, today.**



**Smart Studio™**

[www.smartstudioinc.com](http://www.smartstudioinc.com)

---

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

---