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The outside of the English barn-style conversion.

# TECHNOLOGY FROM MARS, DESIGN FROM VENUS?

CREATING A STATE OF THE ART HOME ENTERTAINMENT ROOM IN A 18TH CENTURY, ENGLISH COTTAGE RAISES THE PERENNIAL PROBLEM: HOW DO YOU INSTALL THE LATEST AV SUITE BUT KEEP IT SYMPATHETIC TO THE CHARACTER AND STYLE OF THE HOUSE. CAMBRIDGE, UK BASED COMPANY AMINA, HAS AN INNOVATIVE SOLUTION THAT SOLVES A SUBSTANTIAL PART OF THE PROBLEM, BY MAKING THE LOUDSPEAKER ELEMENT OF A AV SYSTEM "DISAPPEAR".

This is the dilemma Mark and Andrea Wilton faced when they extended their cottage with a single storey barn style extension to create the living space for an entertainment room. Reclaimed oak beams and period materials were meticulously chosen to blend in and sympathetically support the existing 18th century building. The new rooms not only provided the space for a state of the art surround sound Audio Visual system but carried through the harmony of their home – exposed beams and a simple, clutter-less and elegant feel.

However, after painstakingly recreating the style of the main building, this presented the issue of how to install a 21st century audio visual technology system into the new room but not to the detriment of either the AV system or the subtle barn-style decor. The overriding rule was enable the technology, support the building and hide what could be hidden.

While screens are chosen on their sleek beauty, peripherals such as controls and remotes are designed to please Captain Kirk and most of the "grunt" equipment can be hidden out the way, it still leaves the speakers and where to put them. Do you hide them behind things and diminish the sound? Or do you place them for the best sound and diminish the room?

While traditional loudspeaker manufactures have accepted that their product will cause a visual disturbance (and have spent millions of dollars and research hours in finding ways to make them more aesthetically pleasing and smaller), Amina has gone one stage further, cut the Gordian knot, and made their Plaster-In-wall speakers invisible when installed.

As it says, the Amina speakers are actually plastered into the wall providing fantastic natural sounds with zero visual footprint. Mount them within a plasterboard opening in a wall or ceiling, skim over with plaster and the surfaces are ready for decoration. The process is just as simple for solid walls.

Key to this attribute is the technology employed by the speakers. Amina has harnessed millennia old know-how with space age technology and materials to produce a solution that is truly remarkable and unique.

Amina's flat panel speakers mimic the role of the soundboard in traditional musical instruments such as an acoustic guitar, cello or piano. And while in an instrument the vibrations are created through the plucking of a string, with Amina's flat panel speakers these microscopic surface deflections are recreated through the use of solid state exciters, which take the output from the amplifier and translate them in to precise vibrational movements. Both systems produce billions of tiny vibrations on the soundboard that in turn excite the air molecules and create sound that our ears hear and our brains interpret perfectly.

In Amina speakers the soundboards are "tuned" to accept one to two millimeters of plaster skim. And because of this the vibrations seamlessly transfer through the plaster, then through the paint or wallpaper that is placed on top to decorate it, to excite air molecules on the surface to create the sound.

Now to the first question that is on everyone's lips who hear about the speakers: doesn't the plaster crack? And the answer is "no" – for several reasons. The one thing to remember is that



The Amina 80 watt speakers invisibly pump out 105db.

these vibrations are truly tiny. You can't see them, even when 80 watts are pumping out. But if you were to place your hand on the panel you would be able to feel these tiny movements as our touch senses are far more sensitive. The other thing to consider is that plaster is designed to be flexible – a house moves with changes in temperature and also as it settles. Plaster is designed to cope with these much bigger movements. This means that your standard household plaster finish is more than capable of handling these minute vibrations without cracking.

Does this then mean we can take a set of normal speakers and plaster over them in the wall or ceiling? Again this is a "no", in contrast to the vibrating soundboard technique, traditional speakers use a piston mechanism that push and pull a membrane in and out to create the sound waves. This single large displacement of the membrane would immediately throw the plaster "off".

As well as the aesthetic reasons for using the Plaster In-wall speakers there are other major benefits. These devices have a full 180 degree hemispherical dispersion pattern, meaning that the loudness of the sound reproduced is pretty much consistent in the entire space. Basically you don't get the same level of hot and cold spots that traditional systems often give and you hear all five speakers, i.e. great surround sound, wherever you are in this beautifully created room. This is why they are particularly good to install in ceilings. You don't get the "torchlight" of sound often associated with piston speaker installs. It is worth noting though that sound will travel in both directions, so when installing the product in walls or ceiling with adjoining rooms behind or above, always take advice of sound reduction techniques!

Another phenomena is that because the Amina technology creates sound by establishing a vibrating element within the wall the acoustic energy is distributed over a far wider area in a highly diffuse manner. This means that your whole space (even big open plan rooms) is filled with natural sound.

And to top it all at only 345mm wide, 450mm long and 40mm deep, they can be easily installed either between the stud in modern drywall, or the ancient oak beams which ever you require.

With their queries put to rest, the Wiltons installed their AV suite. And as the photographs show, with the wiring chased back into the wall space and the Plaster-In-wall loudspeakers disappearing in to the structure, they were left with a system truly in concord with the house.

The Home cinema system uses a Harman Kardon AVR 140 AV amp to deliver 6.1 surround sound to the barn through six Amina AIW5X high power 80w Plaster in Wall loudspeakers. Even plastered over with a 2mm thick skim of building industry standard multi-finish plaster the speakers deliver an incredible efficiency of over 90dB at 1w/1m - at full power they will create over 105dB. Now that's loud!

The Soundunseen Plaster-In-Wall loudspeakers are available in three different power ratings to match the budgets and loudness requirements of individuals and their environments: AIW1X 20 watts per speaker, AIW3X 40 watts per speaker and the AIW5X 80 watts per speaker.

Amina is distributed in Australia by UltraLift.  
For more information visit [www.amina.co.uk](http://www.amina.co.uk)