Clementine

Music Recording, Mixing & Editing Studio

Situated in the heart of Chennai at the end of a quiet lane on the second floor of a house is Clementine studio. Clementine is Chennai's newest facility built in line to the newest international design trends. Acoustics playing the central role, but with no compromise to ergonomics and interior design for a comforting open and creative work environment.

It all started last year in an email from Yotam Agam the founder of Clementine after a visit to AM Studios, A.R Rahman's new facility: "Just visited AR's studio a couple of days ago...NICE WORK! Listen I am building my own studio here in Chennai and I need help."

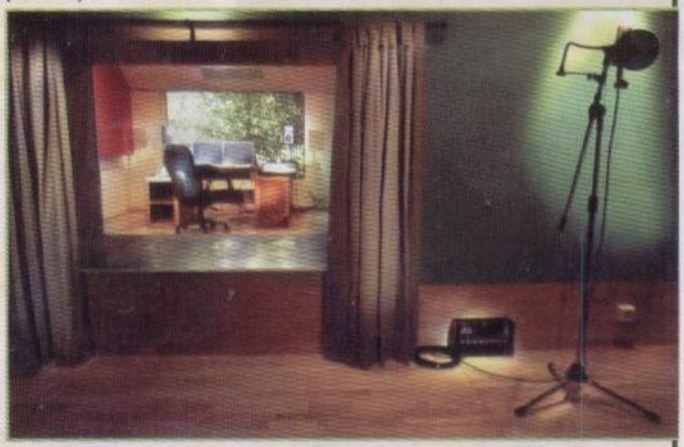
This all had to start with finding the right location and an adequate building for the project. Sound Wizard presented a few guidelines for choosing an adequate location and Yotam got to work straight away. A couple of days later Sound Wizard was invited for lunch and asked to assist in the selection of an adequate location and building from a few options. By the end of day touring Chennai, a house was chosen to be the home of Clementine.

To the drawing board Sound Wizard went. Taking the original blueprints of the house with some additional on-site measurements Sound Wizard's acoustician, Didier Weiss started putting together the puzzle to fit the needed rooms into the existing 190m2 (2000ft2) second floor of the house. One main control room, a dry recording room, a project control room, and three audio/video edit rooms had to be on the second floor. The ground floor would be allocated to a reception, administration, storage, etc.

The layout of almost any house and this not being an exception is not ideal for a professional music studio. Houses have parallel walls, flat and often low ceilings, small rooms and lots of bathrooms. Spaces had to be reshuffled by moving some walls, adding others, closing windows and shifting doors. The location and layout of the main control room proved to be the most challenging as the desirable space was unavailable within any of the existing rooms. After many hours of puzzling, a simple but effective solution was found by using a balcony to extend the size of the "living room" into a proportionally much bigger area. The reward for this clever thinking was threefold, firstly it provided more physical space, secondly it uses the full back wall as an acoustical device and finally it offers a great effect to the interior design of the room.

Increasing the space gave the room more balanced proportions for a normalized international telecommunication union (ITU) 5.1 surround setup. It also allowed having a higher and smoother RT60 without any "bathroom effect". Sealing the extension with a full wall window is key to the acoustical treatment of the room. One normal large double

One of the largest and probably the most undermined hurdles when building any professional sound space is the heating, ventilation and air conditioning (HVAC) system.



Clementine's Control Room (above) and Recording Room (below)

INSIDE CLEMENTINE

glass fixed pane on the outside and a specially designed zigzag uneven pattern to the inside. This bay window works as a bass trap by allowing the low frequency sound energy to escape from the rooms confines. The zigzag uneven inside shape works as a mid/high frequencies sound diffuser to evenly spread the sound waves arriving straight from front speakers, eliminating comb filtering and giving the room a pleasant live sound.

The recording room is placed between the main control room and a project control room. This position offered the option to have a bay window to the control room and a bay window to the project room. This was important for the client because it provides a more versatile use of the space in the facility. The recording room can be used by the control room or project room together or completely independently without disturbing one another. Acoustics in this room are designed to be dry as one of the main recording usage in Clementine is of sampling type.

Acoustical design for the project and edit rooms is kept simple and straightforward by implementing AC silencing and basic sound treatment. Absorption on the side walls and ceiling to reduce the first degree reflections at the listening position and bass trapping for an overall reduction of standing waves was sufficient. Like in the rest of the facility, the floors are also made floating to eliminate transmitting contact noise traveling through the building.

These rooms, all having a view outside, with plenty of natural lighting, they are perfect focused and motivating spaces for people to independently work harmoniously, without distraction.

The Clementine studio project is a good example of how one can create an excellent professional facility while still being economical. The designers (twenty years of professional experience in the field) kept the project bang on target and limited the number of goof ups. Putting full confidence into the designer also meant that no shortcuts could be taken by putting too many "smart" ideas together resulting in a mess. "When a concept is simple then it is often efficient and harmonious" as said by Didier Weiss.

Construction was fast and smooth, but as with all construction it was not a spotless affair. This unusual work, to build a studio requires a lot of dedication and accuracy from the contracting team implementing the plans as specified. No turning back, once the mortar and floating shell are in place, there is hardly a chance that one can properly rectify soundproofing problems if any arises.

10 TIPS TO CONVERT AN EXISTING BUILDING INTO A MUSIC STUDIO

1. Fit all individual areas between beams, as much as possible, to maximize height clearance.
2. Use utility (office, lounge, corridor, storage, etc.) rooms as buffer zones between critical areas. It's a cheap way of getting some extra "free" isolation.
3. Work with windows to offer daylight and a virtual impression of larger open space. This also reduces the claustrophobic feeling of many studios.
4. Use correctly oriented windows as acoustical treatment to diffuse mid and high frequencies through the room. Several thin panes with enough gap, allowing low frequency content to go through and out of the room progressively acting as a bass trap while retaining soundproofing from outside to inside.
5. Reserve enough space (cavity) for proper bass trap treatment, even if it removes a sizeable part of the floor area.
6. AC is always a major source of noise and should be taken very seriously. A good quality facility should have a NC (Noise Criteria) between 20 and 25 for the control/edit rooms; a NC between 15 and 20 for recording spaces. The only reasonably cheap way to get this kind of air noise attenuation is by ducting an already silent split ductable unit. The length of the duct and lining will determine the final noise level in the room.
7. Limit the loss of ceiling height necessary for AC ducting, as it is most often already too low for a professional audio facility.
8. Never forget to include a fresh air intake to the AC system. This will reduce bacteria levels, ensure enough oxygen and avoid people feeling tired and getting headaches in the room after several hours of work.
9. Avoiding all water, bathrooms and drainage pipes running next to sound sensitive areas.
10. All computers, UPS and other potentially noisy devices should be located remotely in a store room or cupboard.

Using skilled laborers, from Pondicherry helped, but as often the case in India it is hard for them to get to grips with complex technical drawings. This is why it helps to have a design team with plenty of local experience and a client willing to invest into a lot of site visits. The design team can then ensure quality control and clearly answer questions to the on-site craftsmen, taking local methods and materials into account.

One of the largest and probably the most undermined hurdles when building any professional sound space is the heating, ventilation and air conditioning (HVAC) system. There is no use spending lots of energy and money making a room sound proof only to put in a split unit making too much noise. The quietest wall mounted split AC units make about twice as much noise as acceptable for an average quality music studio. Clementine is divided into more critical area (recording room) with a NC15 noise level and less critical environments (control, project and edit rooms) with NC25 as an acceptable internal noise level. Choosing a HVAC contractor that understands and is willing to work with these standards is vital to the success of any studio project.

Clementine first-class example of how one can morph a house into an excellent professional music facility without going overboard. With commitment toward detail and an understanding about the importance of acoustics prove to be great assets for any speedy and cost effective studio project. Realizing this project took only 5 months from the first email contact to the day of free flowing Champagne! *PS2*

5 TIPS TO LOCATE & CHOOSE A SUITABLE BUILDING

1. A quiet area, preferably a dead-end small street.
2. Free clean areas without column obstructions in the room spaces.
3. Reasonably high ceilings (minimum 3 meters – 10 feet).
4. No walls adjoining another building, if possible.
5. At the center of a city, for easy access by all musicians, technicians, etc.

by Kumbha Young Grenier & Didier Weiss - Sound Wizard