



CLYDE
BROADCAST

The Radio People

QUIET ZONE

MODULAR BROADCAST STUDIOS AND VOICE BOOTHS



WHY DO WE NEED SPECIAL STUDIOS?

In any environment where there are microphones, there is the possibility that as well as picking up 'wanted' sounds, the mics will also pick up 'unwanted sounds'.

Typically these unwanted sounds include loud conversations and ringing telephones from adjacent rooms, the sound of people working and walking on the floor above you, external traffic noise and in some instances noise from aircraft, if you are on a flight path.

All of these sounds detract from your radio programs and distract listeners, and in general the more 'live' microphones that you have, the greater is the chance of picking up (and broadcasting) unwanted sounds, so in a 'talks' program with multiple mics, this can be a real problem.

Additionally, especially having spent a lot of money on studio equipment, it is important that the presenter and guests in your studio do not sound to your audience as if they are in a bathroom – this is not a pleasant listening experience!

ACOUSTIC ISOLATION

Here we are concerned primarily with ensuring that sounds originating outside of the studio are not heard inside.

Creating an acoustically isolated environment for a radio studio is dependent upon many factors. These typically include the existing building construction, environmental conditions, budgets and desired level of performance.

The traditional methods for building studios, using either 'wet' (blockwork) or 'dry' (stud partition) construction are costly, messy, very disruptive, virtually impossible to dismantle and re-use at a later date, PLUS, and perhaps most importantly, these methods often offer disappointing results due to variations in build-quality and the requirement to work to unusually high tolerances, particularly with the installation of special doors and windows.

Any 'leaks' in the integrity of the sealed room will impair the performance.

Quiet Zone Modular Studios

CONTROLLING INTERNAL REFLECTIONS

Within the studio, when a presenter or guest speaks, the microphone picks up the sound directly.

The original sound also reaches walls, the floor and the ceiling, and depending on how reflective these surfaces are, will be bounced back and reach the microphone a few moments later.

In reality there will be hundreds of these reflected sounds, all reaching the microphone at different times, and at varying strengths, the combined result of which is a kind of echo-effect, which you tend to get in small rooms with hard walls, such as bathrooms.

These reflections are referred to as 'reverberation', and the bigger the echo, the longer the reverberation time.

Reverberation time can be controlled by the installation of special sound absorbing panels, which remove energy from the incoming sound waves, reducing the amount of reflected sound.

FLOATING FLOORS

In some instances it is advantageous to include a 'floating floor' within the studio.

Typically this will be required if there is the possibility that unwanted sounds will be transferred from other locations within the building, via the structure of the building. For example, if there is heavy machinery located elsewhere in the building, vibrations could easily be transmitted via floors, walls and supporting beams.

Isolated floors are also a good idea if the structural floor is timber – which is a great transmitter of unwanted sounds from adjacent areas, acting a bit like a drum skin.

The floating floor is acoustically isolated from the studio walls, and separated from the structural floor via special resilient isolation pads.

PERFORMANCE

The Weighted Sound Reduction Index (Rw) is a number used to rate the effectiveness of a soundproofing system or material.

Quiet Zone Modular Studios have an Rw of 45dB, with an average reverberation time of approximately 400msec - perfectly suited to radio broadcasting applications in most environments.

ADVANTAGES OF THE MODULAR APPROACH

There are many advantages of the modular approach, offered by the Quiet Zone:

- Construction is very quick, with the minimum of mess and disruption.
- Floor loading is far less than using traditional block-work methods.
- The levels of isolation are more guaranteed compared to the traditional approach, which can be very variable and often disappointing.
- It is possible to de-mount the studio and relocate it - impossible with conventional construction methods.

It is even possible to alter the shape or increase the size of the studio at a later date, something which is also impossible (or very messy) using conventional methods.

QUIET ZONE COMPONENTS

Quiet Zone Modular Studios are constructed from a number of standard sized modules, which can be combined into studios with a variety of shapes and dimensions. The maximum internal width is 4.2m, but there is no practical limit to the internal length.

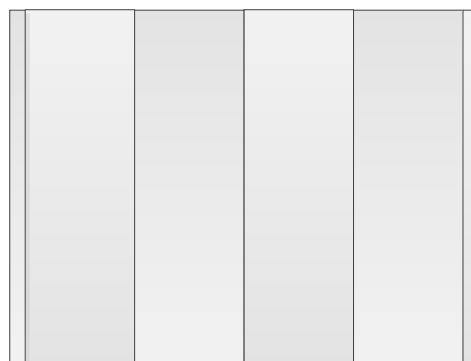
Construction is formed from a number of 600mm wide panels.

The wall and ceiling panels, which have a 'tri-wall' sandwich construction, and are each 600mm x 2400mm..

Corner sections, each 90mm x 90mm x 2400mm, complete the construction..

The acoustic door panel is 1200mm wide (occupying the space of two wall panels) and the acoustic window set is 1000 mm wide, by 1000mm high.

The diagram below shows a typical wall construction.



Quiet Zone Modular Studios



ACOUSTIC DOOR SETS

These have a performance to Rw45, and have single magnetic acoustic seals and a high quality acoustic threshold dropper.

As standard each studio has a single door, fitted with a 12.8mm thick vision panel, 165mm x 1225mm.

Doors are finished in white American Oak , with a satin stainless steel pull handle, finger plate and Dorma TS71 closure.

Doors are supplied with solid wood frames and architraves, also finished in oak.

ACOUSTIC WINDOW SETS

These also have a performance to Rw45, and are supplied ready glazed with two layers of laminated glass.

The standard window size is 1000mm x 1000mm, and the frame and architrave are finished in oak to match the door.

LIGHTING AND ELECTRICS

As standard Quiet Zone Modular Studios are supplied with low voltage track lighting, controlled by a switch on the inside of the booth, by the door.

Vertical trunking houses 2 x MK13A single mains outlet sockets, and a 16A industrial socket (for incoming power connection), supplied from a dedicated distribution board.

Mains power is taken into the booth at a convenient floor-level point, to suit individual installations.

Mains power distribution via suitably fused outlets is assumed to be provided by the equipment supplier.

In Clyde IRS studio and station packages this takes the form of a lightning suppressor and 12-way individually fused MDU, contained within the technical furniture.

AIR CONDITIONING

As standard Quiet Zone Modular Studios incorporate a ceiling void ducted fresh air system with a low noise Vent-Axia inline fan, which draws in external air.

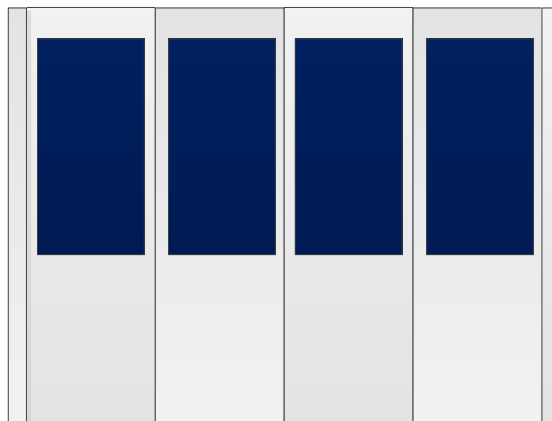
As a cost-option it is possible to fit low noise wall cassette units, with external air-handling unit, as required.

INTERNAL ACOUSTIC TREATMENT

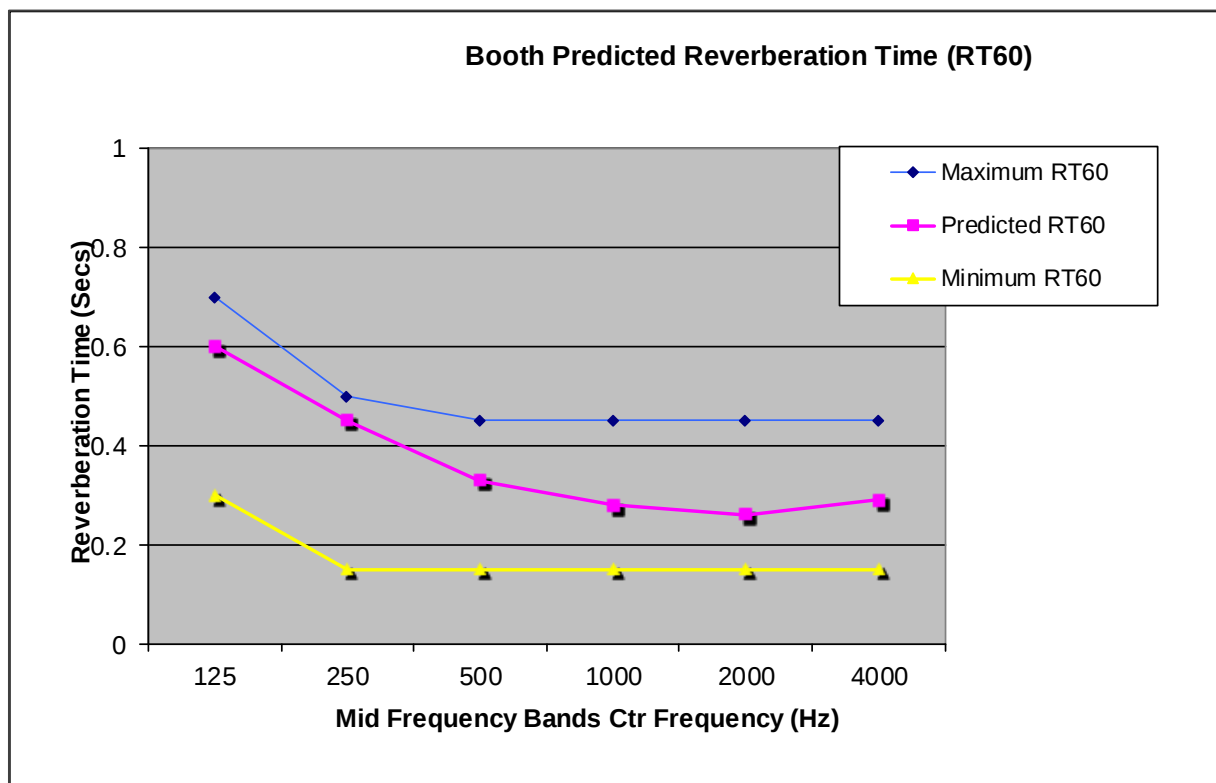
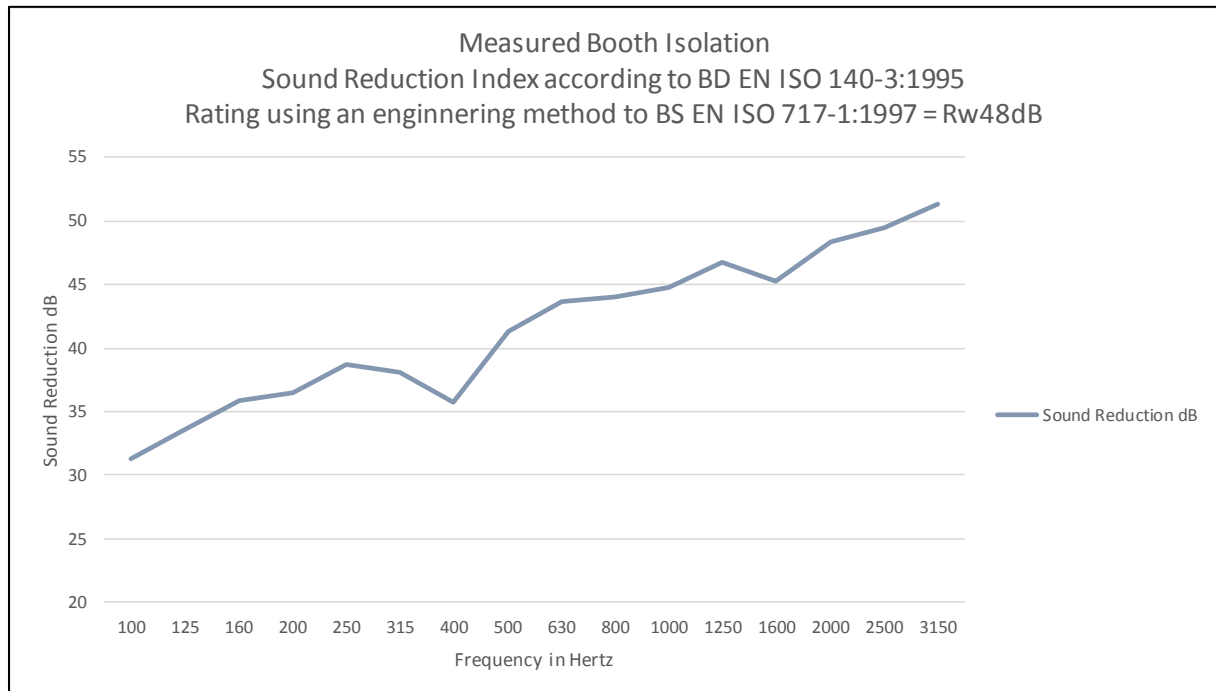
This is achieved using a combination of wall-mounted sound-absorbing panels and an acoustic ceiling.

These panels are installed after the equipment, to ensure optimum positioning.

There are two types of panels, wideband absorbers and low frequency absorbers, used in a combination to ensure the target reverberation times.



Quiet Zone Modular Studios



Quiet Zone 3 Modular Studios

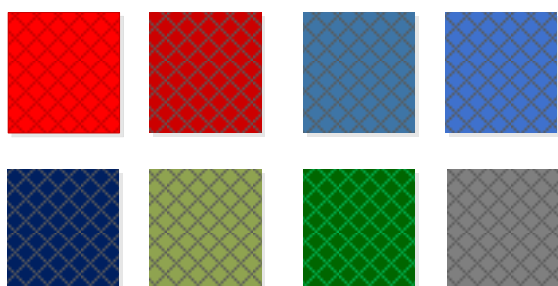
FINISHES

As standard the internal wall panels are finished in a durable fabric (many colours to choose from), and the external wall panels are painted (any colour available).

Floors are finished in anti-static carpet tiles, and the acoustic ceiling is white.

Acoustic panels are available in a wide range of colours, from the Camira Fabrics Cara range, which can be seen on-line at www.camirafabrics.com.

Door and window-sets are manufactured from light oak hardwood, or a similar material.



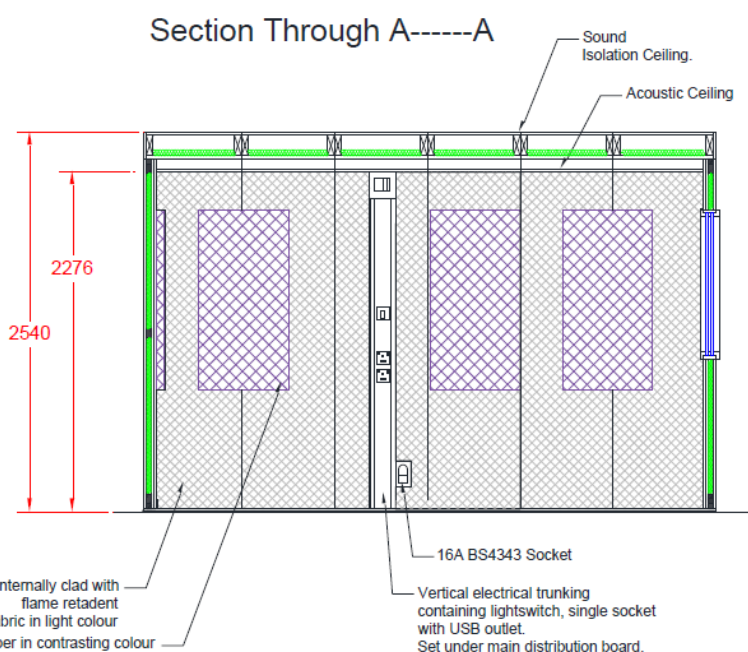
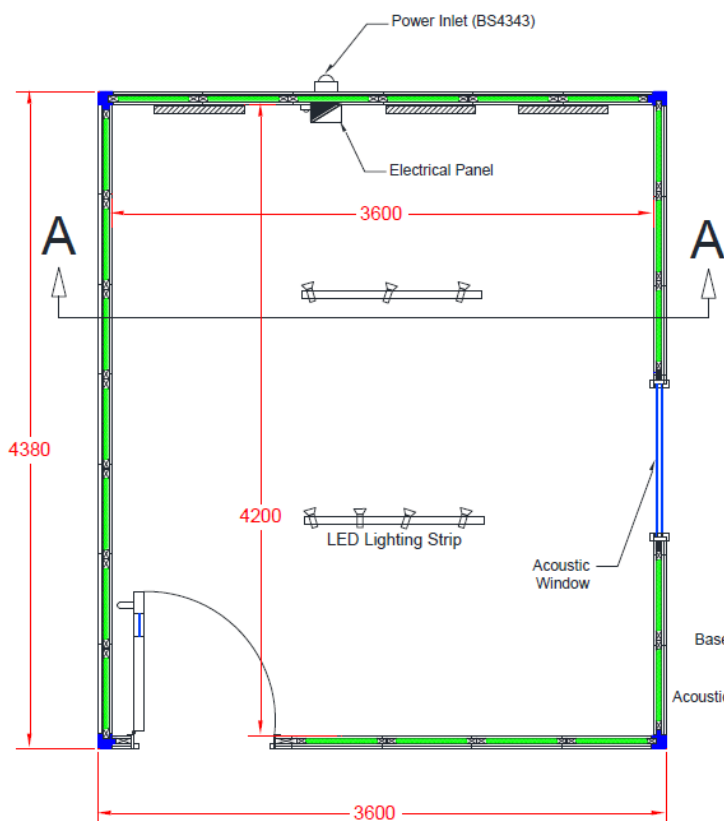
SIZES

We offer four standard sizes, though it is possible to manufacture different configurations.

The layout below, a Quiet Zone 67 Modular Studio, accepts a Clyde Synergy Integra Duo Studio Package, and is 6 panels wide and 7 panels deep, giving an overall available space of a 3.6m x 4.2m.

	Internal	External
Quiet Zone 55	3600 x 3600	3780 x 3780
Quiet Zone 67	3600 x 4200	3780 x 4380
Quiet Zone 77	4200 x 4200	4380 x 4380
Quiet Zone 97	5400 x 4200	5580 x 4380

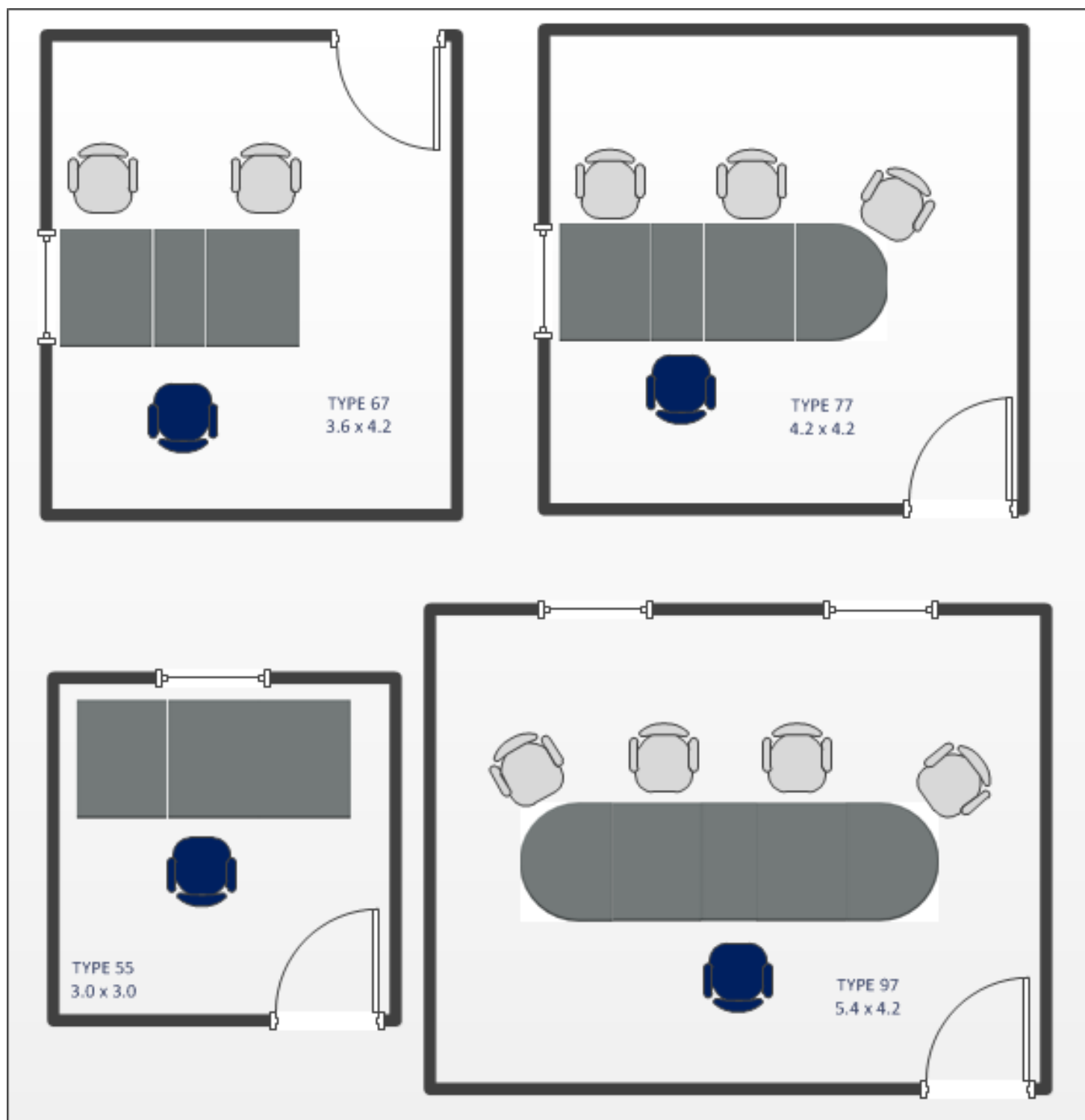
All dimensions in mm.
All internal heights 2276mm.
External height is 2540mm.



Note that door and window positions can be positioned as required, with the further option of additional windows.

Quiet Zone Modular Studios

The diagrams below show typical layouts for the four standard Quiet Zone Modular Studios; the blue chair represents the equipment operator position, the grey chairs are for guests/co-presenters.



ACOUSTIC ABSORBER PANELS

Booth 77 = 6 Low Frequency + 12 Wideband
 Booth 67 = 5 Low Frequency + 11 Wideband
 Booth 97 = 7 Low Frequency + 15 Wideband
 Booth 55 = 3 Low Frequency + 7 Wideband