



St Mary's Church, Hemel Hempstead

AV & Live Streaming System Proposal

Prepared by: Mark Alexander
17 September 2021

Ref: MAQ-HEMESMAY-0521-1.1



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Brian Crawley
St Mary's Church
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Hemel Hempstead
HP1 3AE

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Dear Brian,

Further to our recent meeting please find below updated recommendations and pricing for AV and live streaming system additions at St Mary's Church.

Please note that nothing here is set in stone and I would be happy to discuss alternative solutions to suit your requirements and/or budget if necessary.

Thank you for considering DM for this project. As a specialist church AV installation company, we have installed hundreds of sound and AV systems into churches since 1992 including many, many historic and listed buildings, church refurbishment and new builds. We also cover a very wide range of project/building types and are equally at home dealing with very small or basic PA/loop systems as we are with larger scale projects, so please rest assured that whether your project is on a small, medium or larger scope that it will be dealt with in the same professional manner throughout. We use only our own full-time installation engineers for nearly all (99.9%) of our installation work to ensure that the high quality of our installations is maintained.

Please feel free to contact me should you have any questions or wish to discuss any of this document in further detail.

Kind regards,

Mark Alexander
Project Manager

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Changes since v1.0:

- Added front HDMI input
- Added bespoke boxing for winch in bell ringing chamber
- Added bespoke oak wall case + POE solution for crossing iPad (AV system control)
- Changed projector position and lens

AV & Live Streaming System

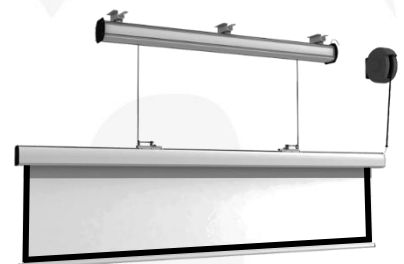
The specification below aims to meet the requirements discussed during our recent meeting at St Mary's Church. This design includes a sophisticated and discreet, yet simple to operate, projection system as well as a single-camera live streaming system with additional inputs for laptops etc. This system allows for local and live stream video sources to be selected independently, for example; allowing the camera image to be live-streamed whilst hymn words are displayed on the projection system. Control will be via two Apple iPad Mini's – allowing for projection system on/off, projection and streaming system source selection, simple camera preset recall and live stream start/stop control. This design is based around use of a live streaming platform such as YouTube or Facebook, not video conferencing software such as Zoom etc. (whilst the latter is possible this would further complicate the system both in terms of hardware and operation – please let me know if you would like to investigate this further).

Please note: a wired broadband connection with upload speeds of 6-10+Mbps is recommended for reliable, HD live streaming.

My recommendations consist:

- 1x Eiki EK-850LU LCD laser projector (7,500 ANSI lumens/8,500 centre lumens) + long throw lens. 20,000hr light source life. Black chassis. Installed discreetly at height on second beam from rear of church (see plan + mock-up).
- 1x 3m wide 16:10 electric screen fitted to electric winch from behind crossing arch (black winch casing / black screen casing):
 - two-stage operation; screen case descends from high level on electric winch – then the screen material winds out from screen case (reverse process to raise screen / winch assembly)
 - very discreet system
 - winch assembly mounted in bell ringing chamber – to be housed in a bespoke wooden enclosure which would also serve as a bench
 - screen case partly hidden behind chancel arch when viewed from nave
 - operated from simple control iPad (see below)

(NB Screen winch has internal safety ratchet and thermal cut-out protection fitted so not ideal for raising/lowering during a service, however the screen motor is very quiet and so could be raised/lowered infrequently during a service if required)
- 1x Roland XS-1HD 4in/4out matrix switcher/scaler – allows independent input source switching to projection and streaming systems. Unit to be controlled via simple iPad control system (i.e. XS-1HD unit not accessible). Inputs to consist: 2x HDMI inputs at equipment rack, 1x HDMI input at lectern, 1x PTZ camera (see below). 2x spare matrix outputs for future use.
- 2x HDMI sockets at equipment rack position for connection of laptops etc. or optional camcorder (see options). Audio to be de-embedded from HDMI signal and routed via existing QU16 mixing desk (one mixer channel per HDMI input).
- 1x 4-way HDBaseT (HDMI over CATx network cable) distribution amplifier for signal distribution to projector and 2x AV output sockets (same signal to all).



- 2x HDBT AV output sockets – located at front of north & south side aisles. For connection of future portable LCD displays (with addition of suitable HDBT receiver – see options).
- 1x Active HDBT HDMI input at front of church for connection of laptops etc. Installed next to lectern as per plan.
- 1x Bolin VCC-7HD30S-3SMN HD PTZ camera with 30x optical zoom (white) – installed centrally above rear doors. Allows views of pulpit, lectern, altar/choir (when projection screen is retracted) as well as a birds-eye-view of the font. Signal, power and control via two cables – coax & CATx. Preset recall via simple control system.



- 1x Magewell Ultrastream HDMI hardware streaming encoder – allows simultaneous streaming to up to two platforms (e.g. YouTube/Facebook) as well as recording to USB drive. Stream/rec start/stop via simple control system. Remote control/monitoring also available via dedicated Android/iOS app (requires connection to same network as encoder)

- 1x Sophisticated Crestron control system with custom user interface on 2x dedicated Apple iPad Minis. Control system to allow:
 - Projection system on/off (inc. screen/winch up/down)
 - Independent input source switching for both local AV and live streaming systems
 - Live stream & record start/stop
 - PTZ camera preset recall



iPads to be installed at equipment rack and Crossing in tamperproof desktop/wall-mount cases. Crossing iPad to be housed in a bespoke oak wall-mount case.

- 1x Dedicated Wi-Fi system for above.
- 1x 7" monitor at equipment rack position – allows monitoring of live streaming encoder input.
- 2x Rode NT5 microphones to capture congregation/organ for routing to live stream - installed at height in nave and crossing.
- All relevant installed/patch cabling, connectors, bracketry and sundries (includes 1x shielded CAT5e cable installed to broadband router location).



- Installation, setup and training by our team of full-time engineers.
- [DM Plus Account](#) – includes 1-year on-site warranty (T&Cs apply)

Total: £30,342.00 +VAT (£36,410.40 inc. VAT)

Options

Pricing here assumes installation at same time as main system installation.

Portable Camcorder:

A Panasonic AG-AC30 professional camcorder with clean HDMI output + heavy duty tripod could be supplied for connection into the system via any HDMI socket. **Add £1,687.00 +VAT**



High Altar Microphone:

A microphone socket and Audio Technica U891RWb wired boundary microphone with built in mute switch could be supplied/installed for use at the high altar. **Add £549.00 +VAT**



AV Output Socket (Chancel):

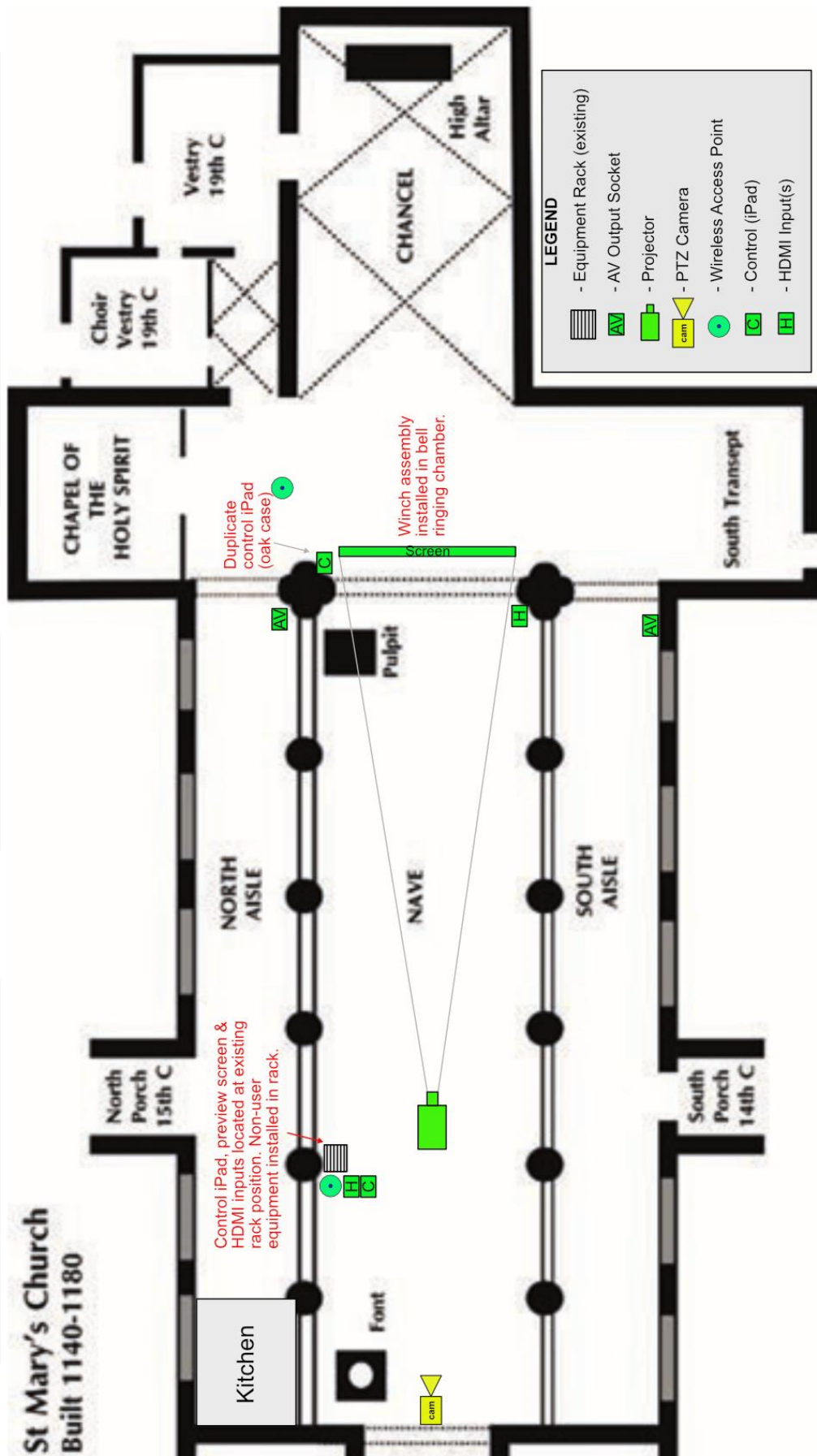
A third AV output socket could be installed in the chancel/crossing to allow future connection of a foldback display for use by choir/clergy. **Add £275.00 +VAT**

HDBT Receiver:

Should the Church wish to supply their own LCD displays for use with any of the specified/optional AV output sockets then HDBT receivers and connection cables would be required. **Add £141.00 +VAT** (per display)
If DM music were to quote for/supply future portable LCD displays then a HDBT receiver and connection cabling would be included – please advise if pricing for portable displays is required.

Plan

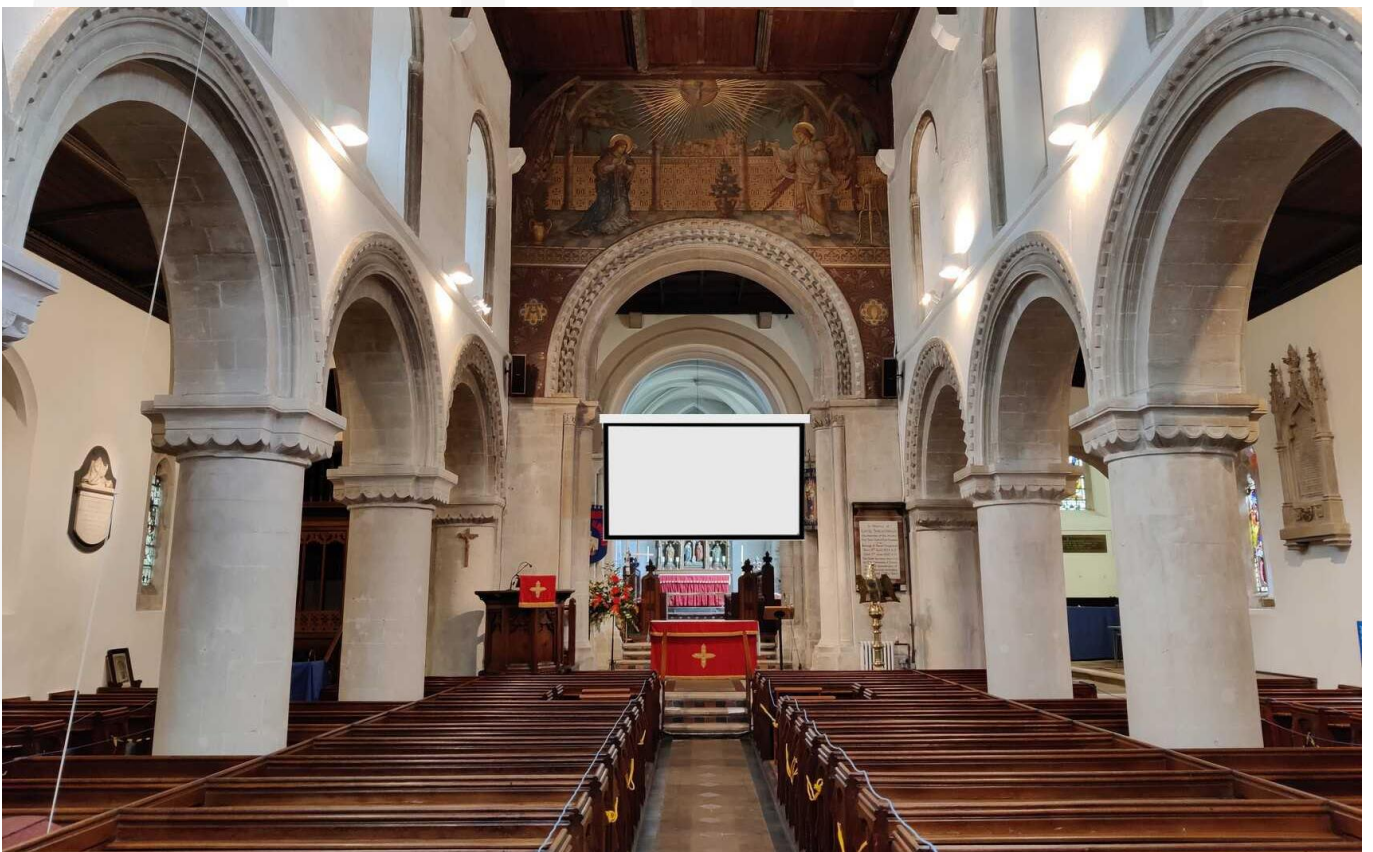
Plan showing approximate equipment positions (not to scale). Options not shown on plan.



Mock-Ups



Mock-up showing projector mounted from beam.



Mock-up showing projection screen in lowered position.

Mock-Ups Cont.

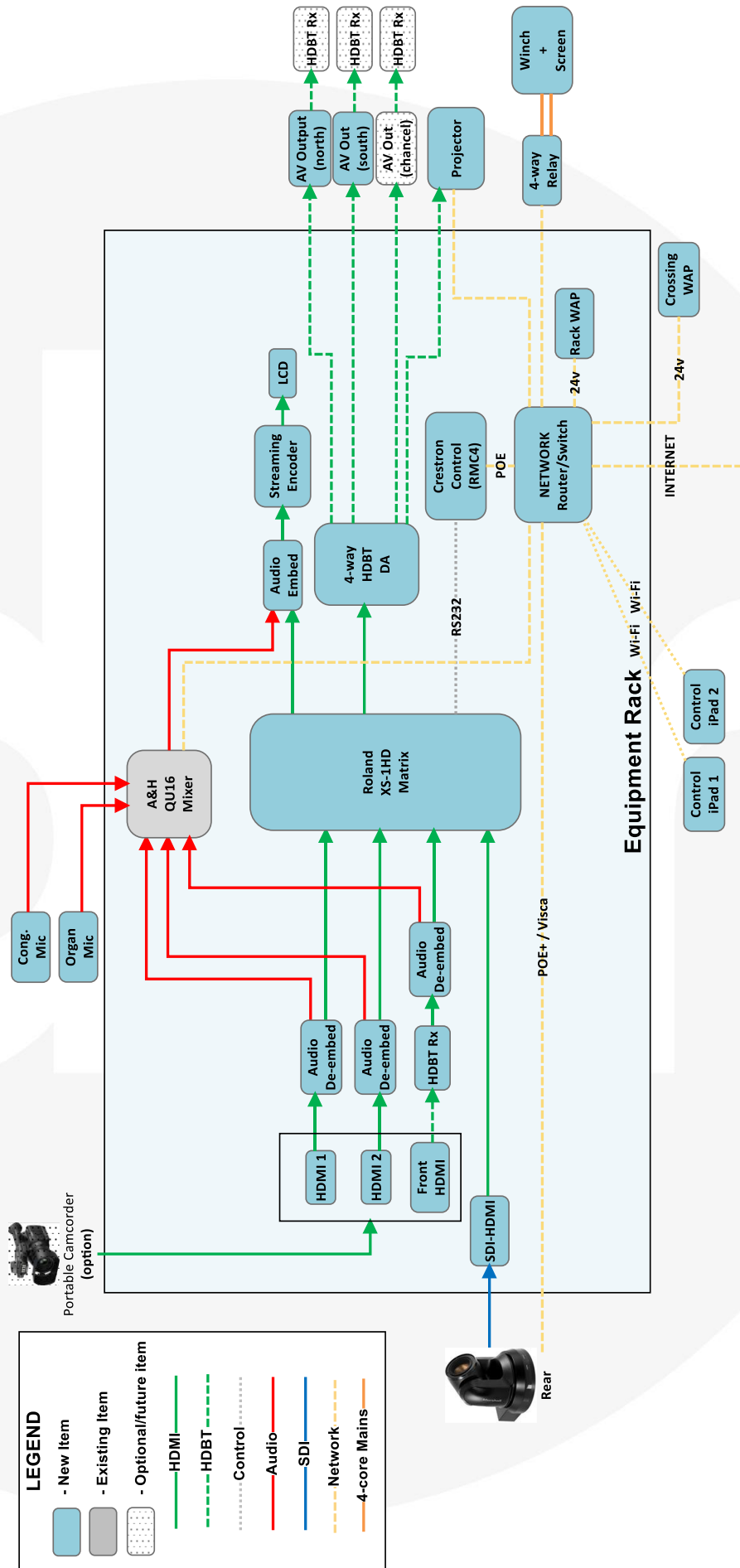


Mock-up showing PTZ camera.



Mock-up showing proposed winch boxing in bell ringing chamber (exact dimensions subject to further investigation)

Schematic

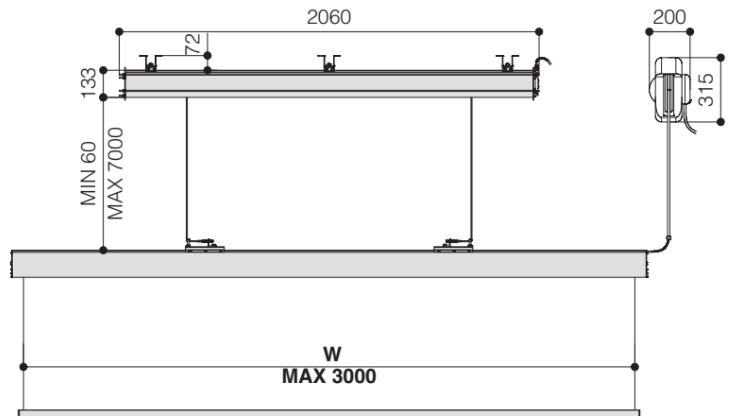
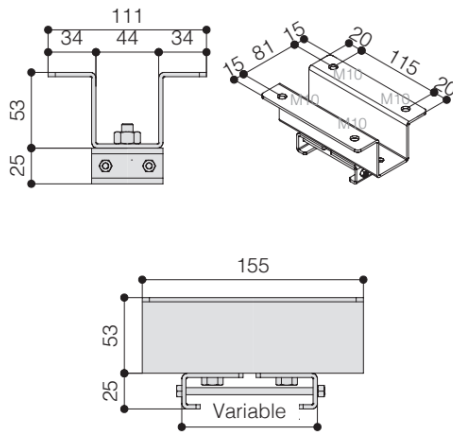


Projection Screen Winch Detail

Winch:

(Note – DM Music will design/manufacture bespoke bracketry to allow mounting the winch on the bell ringing chamber floor)

Ceiling mounting bracket



The measures in the drawings are expressed in millimetres.

Notes on projection screen winch installation:

- Screen + winch equipment weight – approx. 60kg
- Bespoke winch boxing weight – approx. 30kg
- Bespoke winch boxing dimensions – approx. 40x40x220cm (exact dimensions to be confirmed following investigation of the bell ringing floor space – required to confirm positioning of winch and winch cables as well as overall feasibility of the current design.
- Boxing would most likely require relocation of the first step into the clock room.

Pre-Installation Requirements

Prior to installation we would require you (“the client”) to supply the following items/services, which are **not** part of the above quote/pricing:

1. Mains Electrical Supply: The client is to be responsible for the supply of mains power at:

Position	Type	Minimum Quantity
Equipment rack position	13A Double socket	1 (existing)
Projector position	13A Double socket at projector position with a 13A fused isolator switch at an accessible level(*)	1
Electric screen/winch (with separate remote relay)	13A Double socket (Bell Ringing Chamber)	1
AV output socket	13A Double socket	1 (at each – existing)
AV Connection positions	Additionally, you may also wish to consider having 13A mains sockets installed at any AV connection positions to allow for local powering of laptops etc (existing near lectern position)	

(* installing a fused switch at a more accessible level than projector/screen allows power to be cut from the projector/screen when not in use rather than leaving them permanently in “standby” mode. However the position of this is optional depending on your requirements. It is recommended that it is somewhere where it can only be accessed by members of the AV team to prevent accidental or unauthorised operation.)

For electrical safety reasons, as well as to avoid hum/RF interference, all of the electrical sockets used for the PA/AV system should be separate from other domestic equipment and lighting and on one (or more) independent circuits **on the same electrical phase**. e.g. for a music PA system, all sockets for the music group should also be on the same circuit/phase as the mixer, amplifiers, etc.

If you are in any doubt we recommend that you arrange for a qualified electrical contractor to check your electrical system in advance of installation.

2. Existing Equipment: The client is to be responsible for ensuring that any of your *existing* equipment which is intended to be reused is on site and accessible to us right from the start of the installation.
3. iPad or Tablet Setup: If you require iPad or tablet control to be set up on your own tablet(s), then this needs to have been pre-agreed – *including any DM setup/programming costs* – and the necessary App(s) must be installed **by you** on your tablet(s) **prior to DM installation**.
4. Streaming: The client is to be responsible for supply of the following items for live web-streaming use to include:
 - Wired broadband connection near to AV system with minimum 6-10mbps **UPLOAD** speed
 - Registration with a streaming platform such as YouTube Live, Facebook Live etc. (Registration must be setup a minimum of 48 hours before installation to allow your account to be activated in time)
 - Any necessary licences for live streaming (see over page)
5. PC/Laptop: The client is to be responsible for supply of a suitable Laptop or PC for connection to the AV system (must have HDMI output).

6. Parking/Permits: The client is to be responsible for adequate parking (with easy access to the site) being made available for our engineers. The client is to be responsible for arranging and providing for any local parking permits etc that may be required – please advise)
7. Licences:
 - a. Displaying, Recording or Streaming:
Any necessary licences for any of these activities
8. Unhindered access to the building for our engineers from the agreed start date for the total duration of the stipulated installation time:
 - unless it has been specifically agreed with DM in advance of the installation (and the installation time priced accordingly in our quote), then please ensure that there are no services, meetings, play groups/nurseries, or similar happening in any of the areas in which we are due to be working for the total duration of the stipulated installation time.
 - a clear and tidy working space will be required for our engineers in all areas where we will be installing. N.B. This may occasionally include working in the evenings as well as day times, particularly for jobs which are further afield and where the engineers are staying locally.

Any delays caused by lack of the above provisions – including lack of access due to other users in our work areas - may require additional chargeable installation time at our next available installation dates. We would not in those circumstances be able to guarantee to finish the installation within the originally stated time period. (see *Terms & Conditions*)

Other Considerations:

If you wish to record or stream audio/video, or to playback non-original content, please ensure that you are operating legally within UK law and have any necessary licences for displaying, recording or streaming as necessary. More info can be found in the CCLI (Christian Copyright Licencing Inc.) Church Copyright Fact Files at:

<https://uk.ccli.com/about-copyright/fact-files/>

<https://uk.ccli.com/ccli-news/recording-streaming-and-podcasting-your-services/>

These include dedicated fact sheets on amongst others:

- Audio/Video Recording at Church
- Playing and Performing Music in Church
- Reproducing/Projecting Hymns and Worship Songs
- Showing Films at Church
- The Church and the Internet (incl. web-streaming your church services)
- Weddings and Funerals
- Recording, streaming and webcasting your services

Inclusions & Exclusions

The quotation documents produced by DM are intended to give you as much information as possible in order that you can make an educated and informed decision on your PA/AV system investment. For the sake of clarity the main inclusions/exclusions are set out below.

What This Quote Includes:

Unless otherwise stated the above quote includes:

- supply and installation of all the listed equipment
- deinstallation (not disposal) of any existing fittings which are being replaced (e.g. loudspeakers/screens/projectors) and basic "cosmetic" making good of fixing holes
- removal of *installation* waste; dust/cable off-cuts etc, most equipment boxes* and packaging (excluding redundant *existing* equipment)
- 1 year onsite warranty on new DM supplied goods and installation, covering faulty goods under manufacturers warranty and any system *faults* from the DM installation
- Basic, 1 hour training session on the new equipment at the end of the installation

(* It is recommended that you hold onto some key equipment packaging and boxes for at least 30 days - and ideally for the entire warranty period or longer - after installation in case of equipment failure and need to return items. Items returned within the warranty period but damaged due to insufficient packing - e.g. not in the original packaging - will not normally be covered under manufacturer's warranty.)

What This Quote DOESN'T Include:

Unless otherwise stated the above quote excludes:

- supply and installation of any fixed 13A mains cabling, sockets, spurs etc
- de-installation of existing cabling, other than that local to de-installed equipment
- specialist making good of any holes etc left when existing equipment is de-installed (we will include basic "cosmetic" making good where practical)
- chasing cables into walls/floors
- removal from site or disposal of existing redundant equipment*
- DM warranty on existing equipment or non-DM supplied goods
- DM warranty for customer damage to or tampering to new equipment
- training on PC software
- call-outs for additional programming or IT infrastructure changes for digital products
- training on "locked" / non-operated items such as DSP processors
- out of hours training sessions

Are There Any Extra Charges?

There should be no extra or "hidden" charges so long as all of the agreed pre-conditions have been met by you. Situations where extra charges *would* be applied include:

- extra DM installation time required on site due to customer *not meeting* the specified pre-installation requirements including:
 - specified 13A mains cabling, sockets, spurs etc not installed *prior* to DM installation
 - existing equipment (specified to be re-used) not available on site at *start* of DM installation
 - lack of access to some or all of the building for some or all of the agreed installation time
 - other users occupying our work areas (not pre-agreed) during our agreed installation time
 - lack of adequate accessible parking
- items, services or options not specifically requested or listed in the *main* quote being requested or added by you after confirmation of order

If there are any functions, products, colours or dimensions not listed which you were expecting, do not assume that they will be in the final system! Please contact us to discuss first. The installed system will be based upon this quotation document. After confirmation any changes you make to the equipment or installation specification will normally incur additional re-stocking and carriage charges if for example we have to return specially ordered stock to suppliers or manufacturers (as they will charge us).

Cable Routes

All installation work is carried out to the highest standards with cabling and fixings kept hidden where possible and trunking or suitable coloured cabling used where necessary.

- Wherever possible and practical fixings into stone *for very lightweight fittings** will be made to the mortar joints (rather than the stonework itself) and fixings into decorative carvings or mouldings will also be avoided wherever possible and practical. (*For heavier fittings, fixings have to be made into the stonework for safety reasons as the mortar joints will not give a suitably secure fixing. As most brackets have at least four fixing holes anyway, it is very unlikely that all of them will line up with the mortar joints at the same time. In all cases Health and Safety has to be the over-riding concern).
- Wherever possible and practical cables and wires will be routed in such a way as to minimise their visual impact on the interior of the church, e.g. using existing floor ducts, re-entrant corners, wall plates, string courses, high-level beam work, matching to existing cable routes etc
- Wherever possible and practical loudspeakers/other AV equipment will not be fixed to sensitive fabric nor obscure any important detail or detract from the character of the church
- N.B. Where cables are connecting to an actual fixed hardware item (e.g. fixed loudspeaker/ fixed TV / fixed camera etc) adjacent junction box/AV sockets will normally **not** be fitted; instead cables will be connected directly to the fitting to minimise issues with signal attenuation/ impedance which can affect quality and reduce signal transmission distance.

Cables would be run predominantly through existing cable ducts under the floor or at high level through beamwork. Where surface cabling is necessary then this would be silicon glued to avoid unsightly cable clips and kept to corners or natural lines of the building, where possible using white cable on light surfaces and black cable on dark surfaces.

Should you wish to proceed with an installation then prior to applying for a faculty (or Archdeacons permission), we would suggest a final site visit - *with your church architect in attendance* - to confirm exact details, positions for equipment, precise cable routes etc. We can then produce a final design for the DAC in accordance with the church architect's guidance. This is likely to help to keep the faculty process as short as possible, and in any case the church architect's input is likely to be a condition of the faculty or Archdeacons permission being granted.

Access:

The installation time / cost in the quote above is strictly based on us having **continuous and uninterrupted** access to all required areas of the premises for the entire duration of the installation, with any existing PA/AV out of use from day one. Should you require us to fit work in between other premises uses and bookings then we would need to discuss a suitable longer/revised timetable and the additional installation costs that naturally come with a less efficient "piecemeal" installation schedule.

Confidentiality:

Unless DM Music Ltd have been specifically employed on a retained consultancy basis (confirmed by us in writing) and are being paid on an hourly rate as such, then all of the information and pricing contained within this document are strictly confidential and are for the internal use of the church or client only (plus any related official committees or decision-making bodies e.g. DAC). In the event that any information within this document is used, *without the prior express written consent of DM Music Ltd*, to tender or otherwise solicit for commercial competition then it shall be deemed that DM Music Ltd have been employed in retrospect on a paid consultancy basis for all works to date on the project, which will be invoiced immediately at our standard consultancy rates of £75/hour for all time on site, travel time and off-site document preparation and research time, plus any travel or other related costs including mileage at 50p/mile. All prices are ex-VAT. VAT will be charged at the prevailing standard rate. All invoices are strictly on a 7-day basis.