

# Audio Video

## Dates

End of September/early October equipment is ready to be tested

## Video Team

### Members

- Tan Issaro,
- Anagarika Egle and
- Anagarika Deepa,

### Responsibility

1. Setting up the **camera** in the new Sala (high priority)
  1. Starting with one camera, possibly able to be mounted on two location?
  2. Connecting the camera to the **network** for live-streaming
  3. Connecting the camera to the **recorder** for video editor (add to buying list)
  4. Establishing a **routine** for the video officer and video editor and their operation
    1. Who will be in charge or operating, editing, posting, etc.
    2. Documenting the procedures
2. Setting up the **lighting** (high priority)
3. Setting up the **AV room** and **Camera cupboard** with all the items needed (work with audio team)
  1. Furnitures,
  2. Shelving
  3. etc.
4. Setting up the **projector (Tan Jalito)**
  1. We need to buy the projector (ultra short through doesn't have to be, but seems to be a good option)
  2. Electric Sockets are on the walls
  3. Video sockets?
  4. Ethernet socket?
  5. Contractor provide up to the socket (ceiling speakers are included)
  6. Screen is already installed, remote to control it. (should be fixed to the wall)

5. Documenting the process of recording etc.
6. Training other member of the community how to use and do the process
7. Thinking about the routine, who is responsible for operating the process

## Budget




- There is a budget to buy equipment and furniture

## Specs

- Rachaya will share the specs of the rooms

## BLACKMAGIC 6K PRO WORKFLOW:

### Checklist for Recording Day:

STEPS	COMMENTS/ HOW TO..
<b>On the ground:</b>	
1. Turn on Nano II Controller Wheel;                      2. Turn on Bluetooth	1.2 Press <b>Rec</b> button for couple of seconds; 1.2 <b>Bluetooth</b> or  icon -> Connection -> ON -> Settings -> Search and tap on Camera's code ->  -> Confirm.
3. Turn On External Monitor and Atem (if needed).	
<b>On the Ladders:</b>	
4. Power on Camera and Pan/Tilt	4.1 Make sure power is on  . 4.2 Turn On camera manually.
5. Connect Focus motor to External Power bank	Make sure that Motor has <b>purple</b> colour on and is connected to the Wheel. Calibrate motor if needed.
6. Connect External Hard Drive	Use USB cable connected to Camera.
7. Remove lens cap	
8. Review all cables connected to camera and Pan / Tilt.	HDMI; USB; Audio; Power supply adaptors.
<b>On the ground:</b>	
9. On External Monitor check if camera's position is correct.	Use a SYRP app on iPad to addict camera's position if needed. Make sure focus is correct.
10. Start Recording	Press <b>Rec</b> button
11. Stop recording	Again Press <b>Rec</b> button
12. Turn Off Nano II Controller Wheel; External monitor and Atem	

<b>On the Ladders:</b>	
13. Turn Off Camera; Disconnect Motor from Power bank (USB); Remove External Hard drive (USB)	
14. Put on Lens cap	
15. Turn Off Power supply adaptors (Camera and Pan / Tilt)	

## Equipment List

1. **BMPCC 6K Pro Camera**
2. **Canon 70-300mm Lens** (EF mount)
3. **Tilta Nucleus Nano II Follow Focus System**
4. **Rod Baseplate**
5. **15-300 mm Rod** (for mounting follow focus motor)
6. **Power Solutions** (Power supply adaptor for camera; External power bank for Motor)
7. **External Monitor**
8. **External Power bank** (for the motor)
9. **Pan / Tilt**
10. **Dove plate** (for camera balance)
11. **USB (x3) / HDMI (x2) cables**
12. **ATEM MINI PRO** (for lifestream)
13. **Laptop** (for lifestream and camera, bluetooth and Atem softwares/apps)
14. **Base to secure Pan / Tilt**
15. **Chain to secure camera**

## SETUP STEPS:

### 1. Lens Mounting

- Attach the Canon 70-300mm lens to the BMPCC 6K Pro's EF mount.
- Use dove plate to balance camera or/and **lens support bracket** to stabilize the lens. The 70-300mm can be front-heavy, which might strain the camera mount.

### 2. Add Rod Support System

- Attach a **15mm rod baseplate** to the camera.
- Insert 15-300 mm rods and adjust their length to accommodate the follow focus and zoom motors.

### 3. Follow Focus Motor Setup

- **Mount the Tilta Nucleus Nano II motor** onto rod. Position it to the focus ring on lens.
- Attach the **focus gear ring** (included with the Tilta system) around the lens's focus ring. Ensure it is snug and properly aligned with the motor's gear.
- Secure the motor so that the gear teeth mesh with the focus ring teeth. Avoid overtightening to prevent slippage or damage.

#### 4. Powering the Follow Focus

- Connect the Nucleus Nano II motor to the External Power Bank via **USB-C cable** (attached on top of the camera).



#### 5. Calibrate the Follow Focus

1. Connect Motor to Power Bank;
2. Power on the Nucleus Nano II system:
3. On the wheel tap on A/B tag; tap on Connect tag; tap on 2.4G 'ON'; go to CHANNELS select manual and search.
4. Press the motor twice and make sure there is a purple color for focus and (if using) blue color for zoom on second motor.
5. On wheel select the motor model that appear on the screen.

#### 6. Connect camera and Nano II wheel to Bluetooth (for camera settings control)

#### 7. Camera Configuration

- Adjust your BMPCC settings:
  - Set your desired resolution (6K, 4K, etc.).

- adjust ISO/ Shutter speed, White balance;
- Select a crop factor if needed to achieve a more manageable field of view with the 70-300mm lens.
- Enable focus assist features (e.g., focus peaking) for better visualization.
- Make sure that Bluetooth is on.

## **8. Power Management**

- Use power adaptors for Camera and Pan / Tilt and the External Power Bank for the Motor.
- Monitor power levels of Power Bank and Nano II wheel.

## **WEEKLY WORKFLOW:**

### **1. Pre-Shoot Preparation (on ladders)**

- **Charge Batteries:**
  - Ensure the camera, Nucleus Nano II motor, and Syrp Genie system are connected to reliable power sources.
- **Lens Check:**
  - Take off lens lid.
  - Clean the lens with a microfiber cloth.
  - Check the lens's zoom and focus are still correctly positioned (markings on lens).
- **Verify Focus Calibration:**
  - On the Tilta controller wheel, confirm that the focus motor calibration matches the pre-set position for the speaker.

### **2. Camera Visual Alignment**

1. Turn on the BMPCC 6K Pro and connect Motor to External Power Bank and SD Hard drive to camera via USB cables.



1. Verify the frame alignment with the podium or seat where the speaker will be.

- **Focus Motor Check:**

- If the focus motor needs recalibration, perform it now. Use the Tilta Nano II controller to re-align.

- **Lock the Setup:**

- Ensure the pan/tilt system is level, and all screws are tightened

- **Climb Down.**

### 3. Adjusting Pan/Tilt from iPad (if needed)

- Use the **Syrp Genie app** to fine-tune pan and tilt settings remotely:
  - Position the speaker at the center of the frame.
  - Ensure the background is properly composed.

### 4. Pre-Recording Checklist

- **Sound Check:**

- Verify audio setup (external microphone or camera's audio input).
- Test audio levels to ensure clarity.

- **Camera Settings:**

- Confirm resolution and frame rate settings (e.g., 4k ProRes at 25fps or your preferred format).
- Enable focus peaking (if monitoring focus) and false color (to check exposure).
- Lock white balance and ISO settings based on the room's lighting conditions.

- **Remote Control Verification:**

- Test the remote start/stop function on the BMPCC app or Syrp Genie app.

- **Rehearsal:**

- Ask someone to sit in the speaker's position to verify framing and focus.

## **5. Recording**

- Begin recording using Nano II controller wheel
- Monitor the feed during recording (via an external monitor or app) to ensure no interruptions during the livestream.
- Use the Nano II focus controller if adjustments are required mid-session.

## **6. Post-Recording**

- Stop recording via Nano II controller wheel.
- Back up footage immediately to an external SD hard drive or app on computer

## **End-of-Day Routine (on ladders)**

1. Power down all equipment.
2. Cover the camera and lens with a dust protector.
3. Check Power bank and Nano II controller wheel if need to recharge for the next session.
4. Store the Tilta Nano II controller and other peripherals securely.

## **Troubleshooting Notes**

- If the focus motor frequently loses calibration, consider marking the focus ring on the lens to quickly reset it.
- If the Syrp Genie app loses connection, reconnect via Bluetooth and reset the pan/tilt alignment.
- For backup, keep a step-by-step checklist accessible near the recording location.

This workflow ensures minimal manual adjustments while maximizing control through remote apps and maintaining consistency for weekly Dhamma talks.

### Tan Jalito's comments

- No portable equipment (easy training, low maintenance)
- Preferable fix, stationary equipment.
  - Many cons to portable.
- Camera for Sunday talks, rarely used (12 a year)
- Another camera for different angles to record Anumodana?
- Temple PTZ camera works well and is easy to use (saves presets but is expensive)

### Tan Issaro's comments

#### Advantages of using the PTZ Canon camera:

- remote control allows for easy operation by everyone (no need for manual adjustment)
- easy and convenient set-up (extension lead's power button switches the camera)
- FHD video recording gives good quality result

#### Disadvantages of using the PTZ Canon camera:

- the cost of camera, screen and ATEM Mini Pro is 5500£
- small sensor size for this price 1" (13.2 x 8.8mm)

#### Advantages of using Pocket Blackmagic Design camera:

- amazing quality (bokeh and sharpness) due to bigger sensor APS-C (23.10 x 12.99mm)
- portable, can be used on other occasions (i.e. as a second camera in the Temple)
- good price (much lower than PTZ camera) for the quality it delivers

#### Disadvantages of using Pocket Blackmagic Design camera:

- a more complicated setup might involve having a laptop to control zoom, and other settings in the camera, via Blackmagic software. (There is a ipad app that make it easy)
- needs to be switched on and off manually by climbing the ladder (What about this)



## An Egle's comments:

### PTZ CAMERA

#### PROS:

Fixed;  
easy to use and train others;  
full remote control;  
zoom in/out remotely.

#### CONS:

low quality (mobile style;  
no lenses, sensitive to low light;  
low Megapixels (8 MP after zoom in,  
loosing sharpness and natural colors);  
expensive due quality/results  
(£5200 for Canon CR-N500, 4k PTZ);  
minimal possibility of usage;  
designed to record business meetings,  
vlogs or shows etc);  
low (HD) quality records for archives;

### BLACKMAGIC 6K

#### PROS:

extremely high quality (after zoom-in, no megapixels, sharpness colors or details are lost; 24 MP);  
PRO canon lenses f 2.8 will dramatically improve low lighting risk;  
not expensive due quality/results (camera body - about £2000 + Canon lenses - about £2000, Atem £250);  
remote control PAN/TIL - about £200 In TOTAL around £4200;  
high quality (RAW) records for archives or livestream;  
multiple possibilities for using (filming from fixed position or on tripod; outside or inside; filming documentaries; classes; other projects);  
almost full control via ATEM MINI PRO, except for turn on/off. The rest same as PTZ in the temple;  
will last for years in accord with new technologies;

#### CONS:

Some manual actions like turn on/off camera;



PTZ camera 4K (Canon) - 5100£



Pocket camera 6K (BlackMagic) - 2000£

Black Magick 6k MANUAL:

<https://documents.blackmagicdesign.com/UserManuals/BlackmagicCinemaCameraManual.pdf>

best option for wireless control: TILTA NUCLEUS NANO II (for remote control zoom and focus):

MANUAL: [Nucleus-Nano-II-User-Guide-20230912.pdf](#)

[https://tilta.com/shop/nucleus-nano-ii-wireless-lens-control-system/?srsltid=AfmBOorj2ITqmcLKj7rFsYHFFQwLcxhVsOMcpvc\\_e9500AEDISXkaV-J](https://tilta.com/shop/nucleus-nano-ii-wireless-lens-control-system/?srsltid=AfmBOorj2ITqmcLKj7rFsYHFFQwLcxhVsOMcpvc_e9500AEDISXkaV-J)

[https://www.youtube.com/watch?v=\\_gnZQTpzTVk](https://www.youtube.com/watch?v=_gnZQTpzTVk)

BM file sizes:

<https://www.newsshooter.com/2019/08/09/blackmagic-design-releases-pocket-cinema-camera-6k-with-ef-mount/>

BM remote control via ATEM:

<https://www.youtube.com/watch?v=5XZYZQJCmb4&t=3s>

Full remote zoom control via ATEM:

<https://www.youtube.com/watch?v=u0Pz1is1bCY&list=LL&index=3>

## **CAMERA TEST (an estimated date 30th of September) EQUIPMENT:**

- **Camera** - delivered
- **lenses** - we have 3 x prime (24mm / 35mm / 85mm cinema lenses + canon 24-105mm)
- **lenses adapter** - to be ordered (An. Deepa)
- **tripod** - borrow from **Monastery** (Tan Issaro)
- **ATEM mini Pro** - borrow from Monastery (Tan Issaro)
- **Internet** - Tan Cittadhammo ??
- **Ipad or laptop** - Tan Cittadhammo ??
- **ladders** - should be in sala (to check with Rachaya)
- **2 x table** (one for tripod and atem + ipad) - borrow from the kitchen (An Egle)

# Audio Team

## **Members**

- T. Issaro
- T. Jalito
- T. Karunno

## **Responsibility**

- **Setting up and test** the audio equipment that is necessary to do the **PA** from the different locations:
  - In front of the main shrine
  - In front of the secondary shrine (niche)
  - In the monk eating area
  - In the cloister
  - **Note:** in our current contract with Jigsaw, they have to provide the complete installation and even a **demonstration** of the product.
- Setting up the audio equipment that is necessary to **record** Dhamma talks (check with video team above)
- Setting up the **AV room** and **Audio cupboard** with all the items needed (work with video team)
  1. Furnitures,
  2. Shelving
  3. etc.

## Budget

- There is a budget to buy equipment and furniture

## Specs

- Rachaya will share the specs of the rooms

## Notes

1. Suggestions were given for the construction and separation of the (currently) shared cupboard space in the Monks Eating Area, to separate the audio equipment space from the cushion storage space. This is to ensure that the dust from the cushion storage does not have a negative impact on the life expectancy of the electronics (especially the rotary/linear pots on the mixer) in the audio equipment.
2. Another suggestion was a change of the location for the audio inputs/outputs for the Cloister, thereby connecting the audio from the Temple, Sala and the Outdoor areas. Something that was not practically feasible before. (see point 6)
3. The dual mic is digital, and it would be better to have radio UHF one less prone to interference

[Q] Can we remove it from the list and buy it ourselves, we would choose **Shure GLXD24R+/SM58** instead

See Mics for more information

4. Warranty, how do we manage? [Q]
5. Suggestions for the cloister audio mixer that link the temple and the Sala (by Tan Karunno)

For the cloister audio mixer, Tan Karunno propose to buy

**Yamaha MG10 10-Channel Mixer from:**

1. <https://www.musicmatter.co.uk/yamaha-mg10>

2. <https://www.pmtonline.co.uk/yamaha-mg10-mixing-desk>

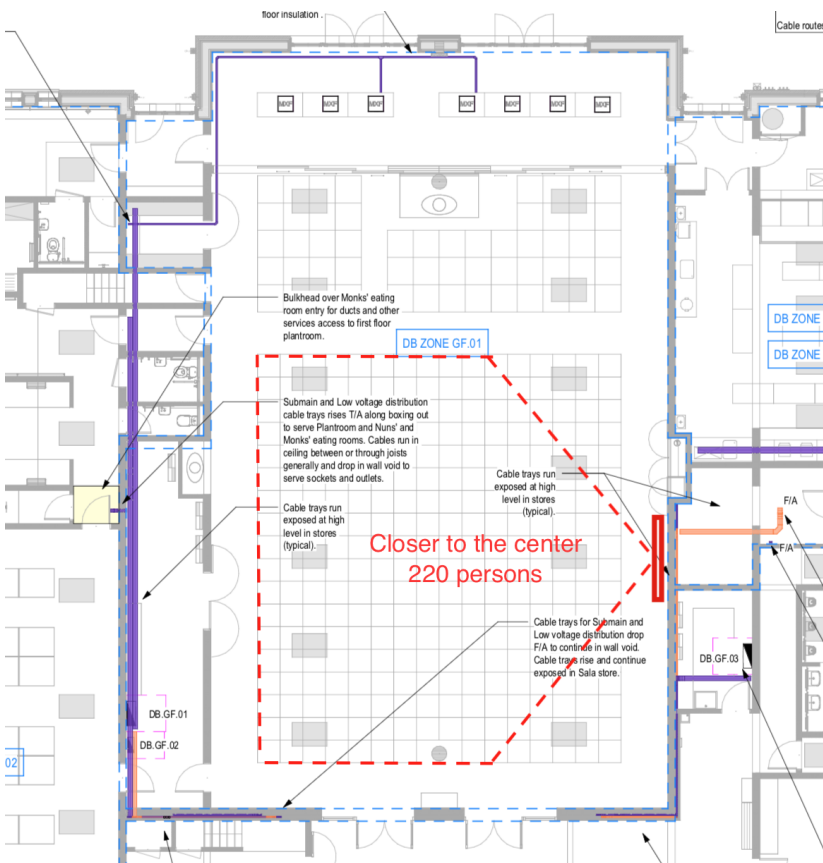
3. <https://www.gak.co.uk/en/yamaha-mg10-mixer/93163>

Also, note that Microphone cables are not on any list so far.

# Projector

## Note

1. [Q] we have to provide the projector ourselves
2. [Q] target budget
3. 3 Options
  1. Long distance projector mounted on the opposite wall
  2. Ultra Short throw mounted at the top of the screen
  3. Ultra Short throw as a portable unit that sits in front of the screen when needed (with small cart)
    1. Need a place to store the projector and the cart.
4. Can we move the screen to the right?



## Long range projectors

- this has the right trough ratio [Throw Ratio: 4.6 - 7.2]
- Good selection here

- Optoma X605e Projector
- Optoma-EH500
- EB-2250U
- NEC PV710UL-W1-13ZL



Epson PowerLite Pro G5150NL

(discontinued)

1024x768 3LCD, 4,000 lumens, 1,000:1 contrast, 14.8 lbs

+ Add to Compare List

Projector Details

Lens

Epson Middle Zoom ELPLM05

Throw Ratio: 3.52 - 5.36, 11.8 - 12.5

Aspect Ratio

4:3

Units

Throw Distance

15.92 m

0 m10.65 m16.27 m32.28 m

Image Size

302 cm

Width

0 cm302 cm600 cm

Throw Distance

15.92 m

378 cm227 cm302 cm

Zoom Range

1.02x1.53x

TelephotoWide Angle

Estimated Image Brightness

133 nits

Recommended image brightness for rooms with low ambient light

Screen Gain

1

Ceiling Mount



Epson EB-PU1006W

1920x1200 3LCD, 6,000 lumens, 34.0 lbs

+ Add to Compare List

Projector Details

\$7,265 Buy Online

Lens

Epson Middle Zoom #3 ELPLM10

Throw Ratio: 3.32 - 5.06, 11.8 - 12.4

Aspect Ratio

16:10

Units

Throw Distance

15.43 m

0 m10.14 m15.45 m30.36 m

Image Size

305 cm

Width

0 cm305 cm600 cm

Throw Distance

15.43 m

360 cm191 cm305 cm+ 95 cm

Zoom Range

1.00x1.52x

TelephotoWide Angle

Estimated Image Brightness

242 nits

Recommended image brightness for rooms with high ambient light

Screen Gain

1

Ceiling Mount



Epson EB-PU1007B

1920x1200 3LCD, 7,000 lumens, 35.9 lbs

+ Add to Compare List

Projector Details \$8,250 Buy Online

LensEpson Middle Zoom #3 ELPLM10Throw Ratio: 3.32 - 5.06, 11.8 - 12.4

Aspect Ratio16:10Units

Throw Distance15.18 m0 m10.6 m16.16 m30.36 m

Image Size319 cmWidth0 cm319 cm600 cm

Throw Distance15.18 m

319 cm376 cm200 cm+ 100 cm

Zoom RangeTelephoto1.06xWide Angle1.52xCeiling Mount

Estimated Image Brightness263 nitsRecommended image brightness for rooms with high ambient lightScreen Gain1

Short throw

- Epson EB-770F (£1,428.00)
- Epson LS800 (£2,992.80)

Documents

‘Acoustic - Public Announcement System’ Drive Folder

Acoustic - Public Annou...

TypePeopleModified

Files

6743-MXF-XX-XX-...

Sala Pubblica Amministrativa Municipality

6743-MXF-XX-XX-...

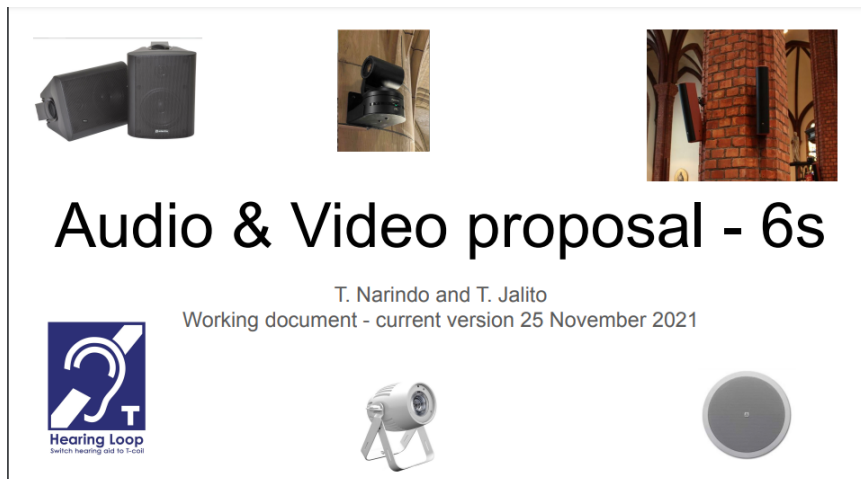
6743-MXF-XX-XX-...

6743-MXF-XX-XX-...

# Audio & Video proposal - 6s

T. Narindo and T. Jalito (25 November 2021)

Proposal\_ AV Sala - project 6s.pdf



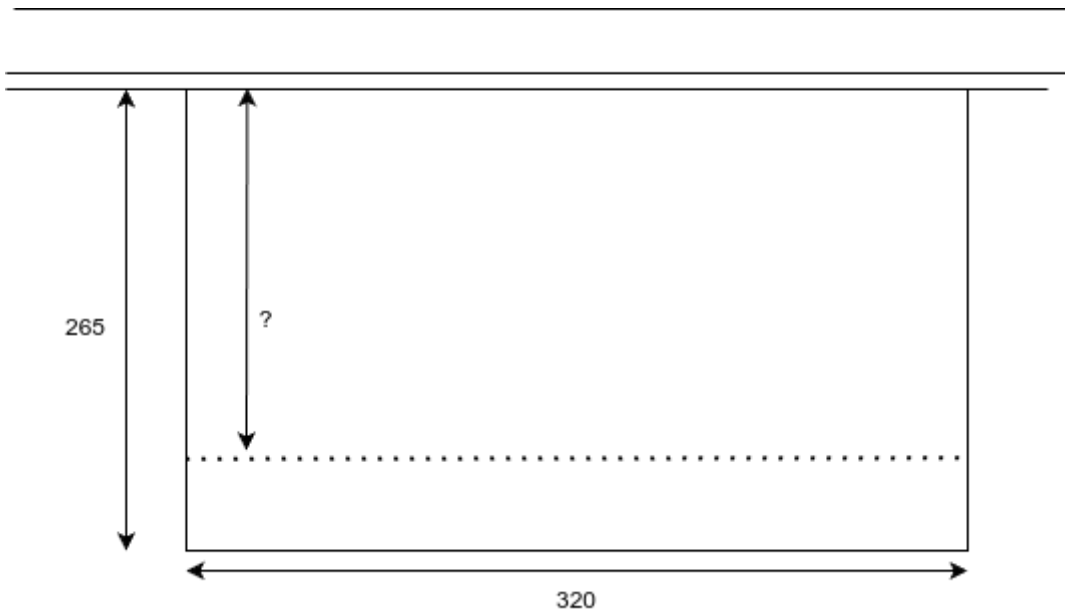
## Plans

## Screen

What is the quality of the screen? Is it good enough for Ultra Short Throw?

This is the brand of the screen we have, not sure exactly which size, probably 135" or 150"

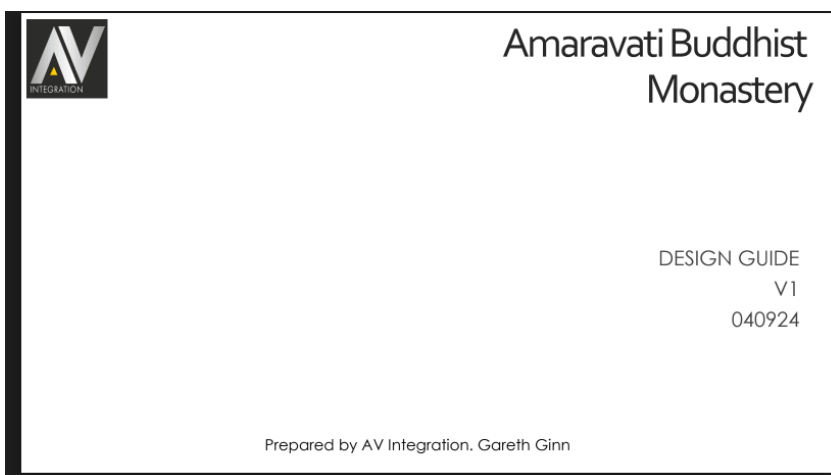
version: <https://www.platinumhomecinema.co.uk/product-category/electric-screens-matte-white/>



The room is 15m wide wall to wall

## AV Store

Drawing for the AV rack in the AV room



Comments:

- The only thing that comes to mind for the audio part is that it would be useful if the **audio rack/cabinet had a front door with a clear see-through panel**. A 19-inch rack with a glass door keeps the internal environment dust free. And since this is an installation, this would seem appropriate here.
- Furman Power Conditioner for the audio rack. (Tan Karunno)  
*I assume the Sound Engineer has already thought about this, but just to be sure; a **Furman Power Conditioner** makes sure that the power supply for the rack would be perfectly smooth and could eliminate any noise or hum, or from power "spikes" from the on/off switching of other things in the building (i.e. the refrigerators in the kitchen, lights, etc.). As I do not know the current power cabling instalment (number of phases, outlets,*



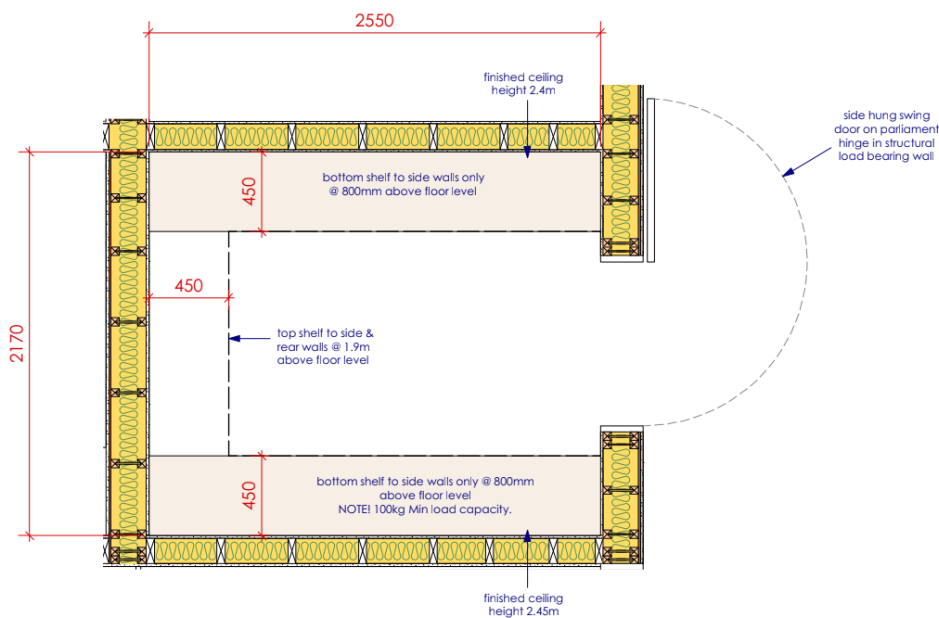
the nearest transformers (if applicable), or if there is already a power conditioner for the entire building), it would be something to ask the Sound Engineer, as he would be able to verify, or to take this into consideration.

I will link this just as an example, so that people not into audio power conditioning will know what I am referring to.

[https://www.thomann.co.uk/furman\\_pl8\\_ce.htm](https://www.thomann.co.uk/furman_pl8_ce.htm)

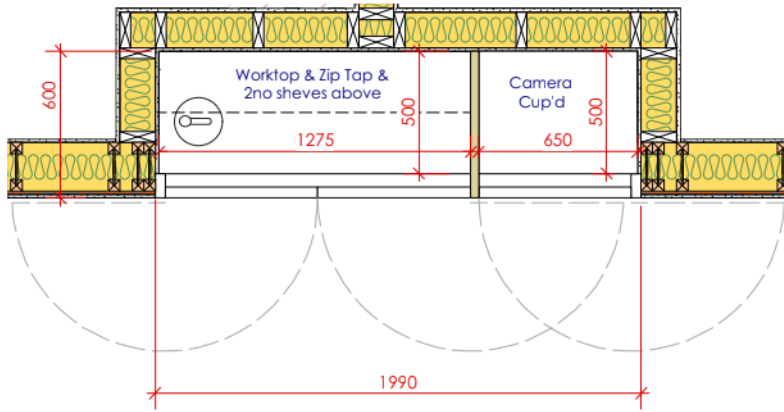
- **Mic solution:** still in discussion, possible candidate:
  - <https://www.sennheiser.com/en-gb/catalog/products/wireless-systems/ew-d-835-set/ew-d-835-s-set-s1-7-508753>
  - Or the same as in the temple
  - Choice of the mic is actually quite tricky as it needs to be "old-people" proof (two state only front button on/off) according to his experience.

## Initial Drawing



## Actual measurement:

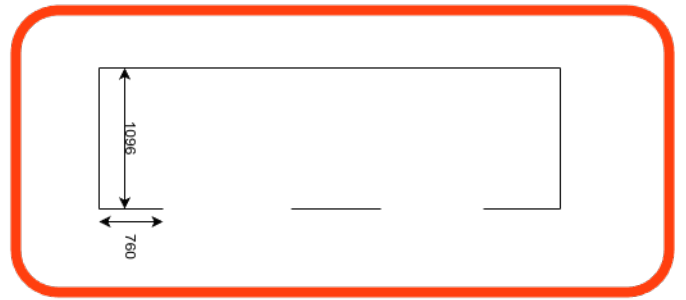
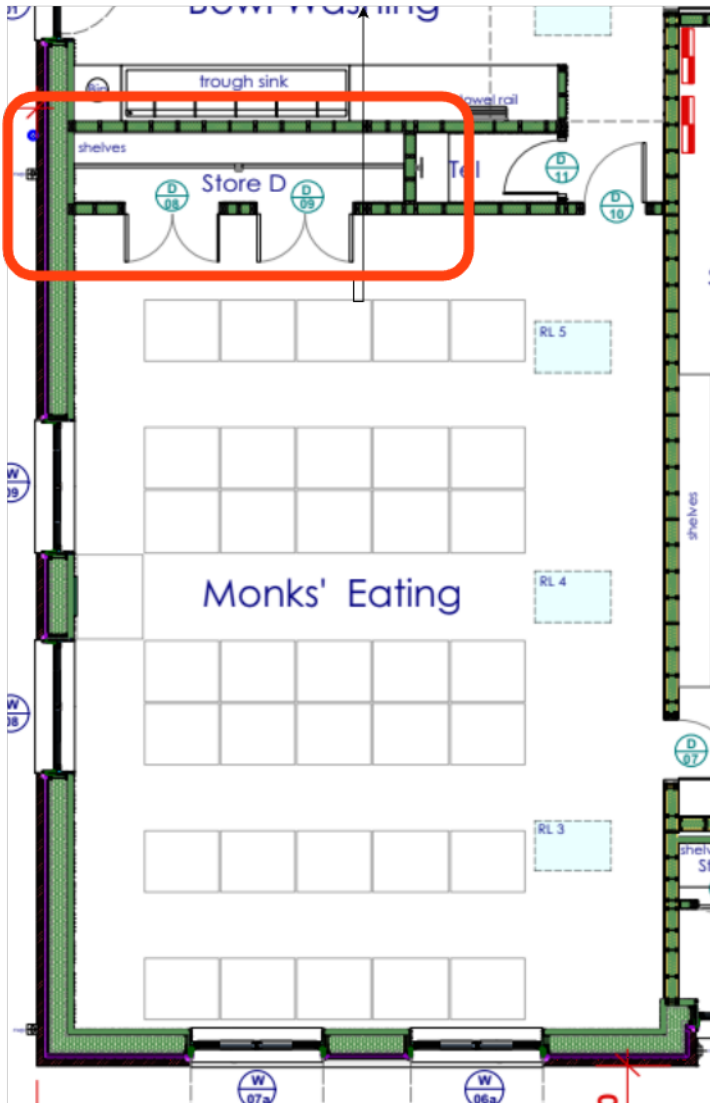




NB: Tea Station & AV Cupd:  
Internal fit out laminate cupd  
door, pull out draws & shelves,  
dividing board and internal  
linings all to be faced with  
Howden's Oak Laminate to  
match Tea Station splash back  
on moisture-resistant chipboard  
core. 38mm Howdens mid grey  
worktop counter.

## Monk's Eating Area Cushion Cabinet (Where the PA system is)

**Actual measurement:**



Revision #67

Created 17 July 2024 10:10:54 by Cittadhammo Bhikkhu

Updated 28 November 2024 13:09:11 by An. Egle