Museum Audio Visual Displays
Owen Conlan, Media Technology Manager,
and Jessica James-Moody, Senior AV Technician,
Powerhouse Museum

REGIONAL WEBINAR SERIES
POWERHOUSE MUSEUM

Media Technologies Team

Exhibitions

Events

Audio Visual Installations

Topics of Conversation

- What to consider when installing AV
- AV on a Budget
- Hints & Tips
- Resources
- Contacts

What to consider when installing AV

WHY
Why is this AV being installed? What is its purpose within the exhibition?

WHAT
What is the content? How will it best be displayed? How long does it run for?

WHERE
Where will it be installed? Is the building heritage listed? What are the light levels like? Is there access to power or network?

WHO
Who is your intended audience? Do power buttons etc need to be covered?

HOW
How will this be installed? What equipment do you need for this?

Experimentations Exhibition, 2018

Single Screen Case Study

Surface Mounted, audio from the screen

Flush Mounted, soundbar

Rear Mounted

Rear Mounted, speakers above

AV on a Budget

- Media Player Options
- Free Resources
- Simple ideas for cost effective Interactives

Media Player Options

USB – From $10
Load content and play. For TVs – works best with images. Manual start up required each day.

Raspberry Pi – From $70
Mini Computer. Basic programming skills required. Low daily maintenance. Automatic start-up.

Lupa Player – $300
Simple looping media player. Extremely easy to use – no technical skills required.

Brightsign – From $600
Complex Media Player. Programming skills required. Extremely Versatile and highly reliable.

Raspberry Pi

Brightsign

Free Programs for Raspberry Pi's

<u>Screenly</u>
Simple content playback system – commonly used for wayfinding displays. Internet connection required. Content loaded over the network. Simple programming skills.

www.screenly.io

<u>Pi Presents</u>
Specifically designed with museums in mind. Programming skills required. Flexible system to allow for simple loops or more complex interactives.

https://pipresents.wordpress.com/

Content Editing Resources

Da Vinci Resolve
Video Editing Software

https://www.blackmagicdesign.com/products/davinciresolve//

Audacity
Audio Editing Software

https://www.audacityteam.org/

Powerpoint
Simple tool to convert presentations into video.

Content Creation Resources

Pexels
Royalty free images and videos

https://www.pexels.com/

Freesound
Royalty free sound effects

https://freesound.org/

Audio Library
Royalty free music

https://www.audiolibrary.com.co/

Fiverr
Freelance services marketplace

https://www.fiverr.com/
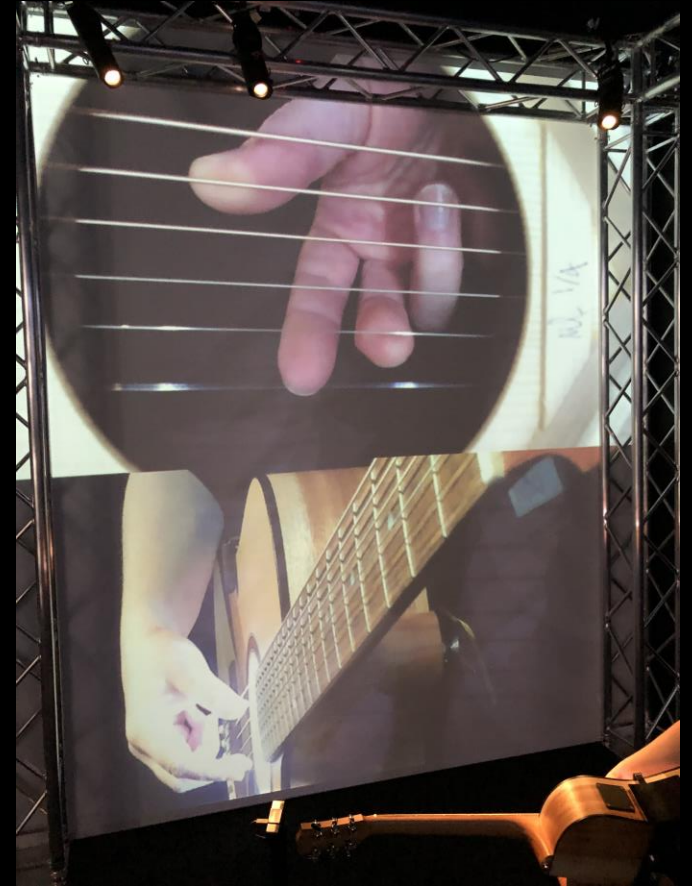
Cost Effective Interactives

Hints & Tips

- Projectors
- Screens
- Mounting
- Playback

The Lab Gallery

Hints & Tips - Projectors

Running Costs
Lamps need to be replaced and filters cleaned regularly.

Lumens
The higher the number the brighter the projector. We recommend upwards of 3000lms.

Shadow Casting
People casting a shadow on the screen when they get too close.

Size of Image
Different lenses. Distant to screen. Use a projection distance calculator tool to help.

Colours
Projectors do not project Black.

Front vs Rear Project
Different screen types, shadows.

Heat Emission
Need space around them for air flow.

Install Direction
Does it work when installed in portrait mode?

Mounting Brackets
Weight of projector. Tilt adjustment.

Resolution
Full HD vs 4K.

Learn & Play! teamLab Future Park Exhibition at the Powerhouse in 2018

Shape 2020 Exhibition

Image Credit: Zan Wimberley

Hints & Tips - Screens

Screen Burn-In
If an image is static over a long period of time it may burn into the screen and be visible when displaying other images.

Viewing Angle
If installing flat you will want a viewing angle that is as close to 180 degrees as possible.

Room Brightness
If your room is bright – a screen may work better than a projector.

Multiple Screens
If screens are displaying the same content next to each other it is important to have the colour balance the same.
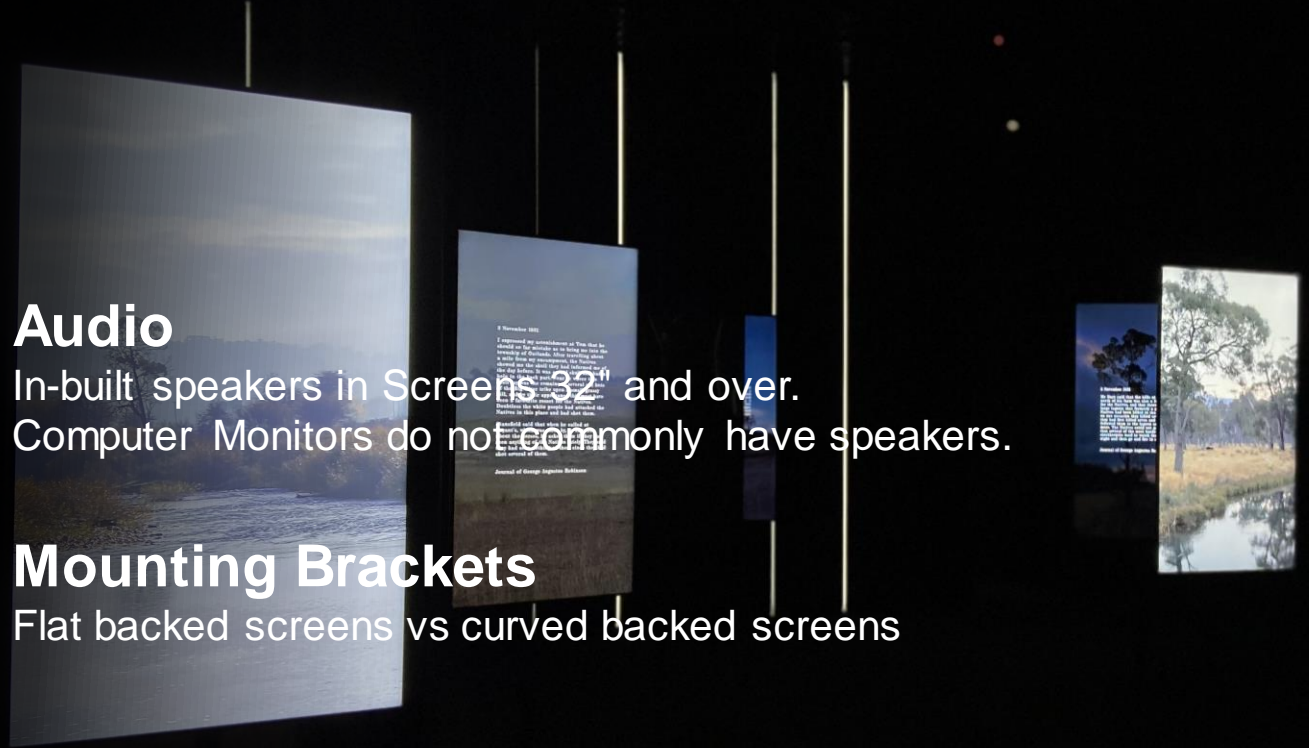
Audio
In-built speakers in Screens 32" and over. Computer Monitors do not commonly have speakers.

Mounting Brackets
Flat backed screens vs curved backed screens

Heat Emission
Low heat emission but still require air flow. Important to check this if installing in a showcase.

Witness by Julie Gough. Commissioned by the Powerhouse Museum for the exhibition Eucalyptusdom, 2021

Shape 2020 Exhibition

Image Credit: Zan Wimberley

Shape 2020 Exhibition

Image Credit: Zan Wimberley

Hints & Tips - Mounting

Install Height
We have our standard set at 1500 to the centre of the screen.

Screen Mounting Brackets
Cheapest option is the split batten.
You can get different types for surface, flush or rear mounting.

Portable
There are some great TV stands on wheels that are very
good for events and temporary displays.

Projector Brackets
Be sure to check the weight of the projector. Also good to
have some adjustment in the bracket too (for tilt)
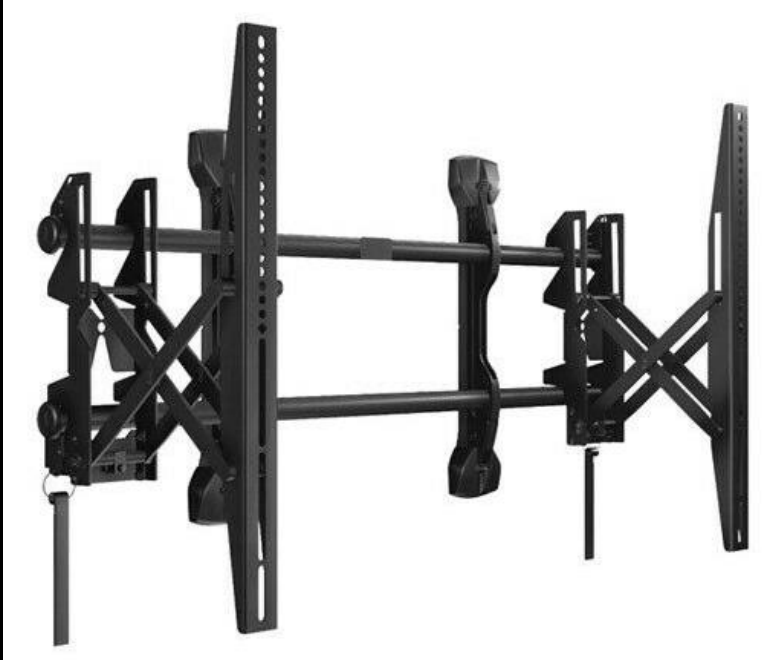
Cable Management
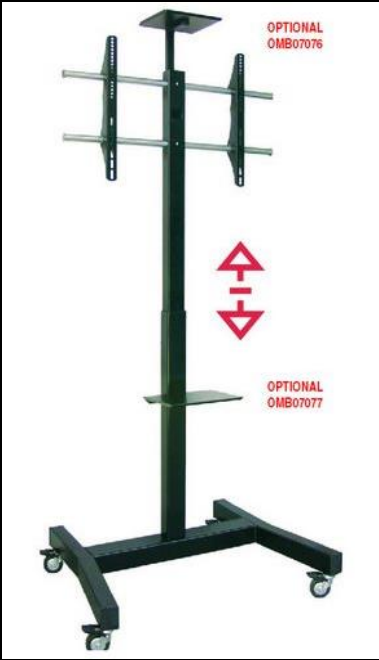Conduit, spiral wrap, cable ties

Invisible Revealed Exhibition 2021

Mounting Brackets

Surface Mounted

Flush Mounted

Portable

Projector Mount

Hints & Tips - Playback

Timings
7-10 seconds per image

Video Lengths
People only watch a video for an average of 2mins

Motion Trigger Sensor
Control your content playback from a motion sensor.

Resolution
Standard is 16:9. 1920x1080 which is Full HD.

Power Timers
Set a timer to power on your device at specific times.

File Types
Most common are mp4 for video and mp3 for audio.

Collette Dinnigan Exhibition 2017

Resources

Wes Components
Wholesale distributor for electronic components and accessories. Including Mounting Brackets

https://www.wes.com.au/

Core Electronics
Raspberry Pi's and other electronics

https://core-electronics.com.au/

Screen Technics
Screens and Mounting Brackets

https://screentechnics.com.au/

Screen Guys
Various screen solutions, including touchscreens.

https://www.screenguys.com.au/

Coleman Group
Signage company. But have good options for projection frames and material.

https://www.colemangroup.com.au/

Littlebird Electronics
Raspberry Pi's and other electronics

https://littlebirdelectronics.com.au/

Shirley Spectra
Brightsign expert and supplier. Brian is incredibly knowledgable and extremely helpful.

http://www.shirleyspectra.com.au/

Jaycar Electronics
Electronics components retailer

https://www.jaycar.com.au/

Lupa Player
Looping Media Player.

https://lupaplayer.com/

Projection Distance Calculator
To help calculate installation distances for your projector.

https://www.projectorcentral.com/projection-calculator-pro.cfm

Contacts

Owen Conlan
Media Technologies Manager
T 9217 0235
E owen.conlan@maas.museum

Jessica James-Moody
Senior AV Technician
T 9217 0657
E jessica.james-moody@maas.museum

Museum Audio Visual Displays
Owen Conlan, Media Technology Manager,
and Jessica James-Moody, Senior AV Technician,
Powerhouse Museum