PROCESSED

WORKBOOK

P R O D U C T I O N

T E C H N O L O G Y

A D M A 4 0 0 4

Ai Declaration

I confirm that I have not used any AI tools in the research and creation of this
assignment. I confirm that I have not presented any AI generated materials as my own
work. I confirm I have copies of my drafts, notes, and other resources I used, which I
may be asked to provide in evidence.

Stage Sound Systems

Designing band and radio mics

Work with director and music director to create a unified vision for the shows mood and atmosphere

Bring composers sound to reality

Musical Theatre

Sound Designer

Create unified vision for mood and atmosphere

Straight Plays

You work with the director

Own Composistion

Own Effects

Operates Faders

Remains in Auditorium

Go to person for the designer

“Best ears in the room”

Sound Operator No1

Will mix the show using Levels, Eq and the monitors

Relays instructions to operators 2 and 3

Stage Sound Systems

Traditionally a mic or effects technition

Prepares, Manages and maintains microphones

Liaise's with costume because of the positioning of belt packs and mics

Sound Operator No2

Prevents and Solves technical Problems

Labelling

Mic's the actors

on hand to help problem solve

Newest team member

Sound Operator No3

General assistant

Runner that assists 1 and 2

Bounces between Front and back of house

Stage Sound Systems

MUST ask local crew before plugging up and unplugging venue equipment

Crew/In house staff

Resident/in house and local crew are people from the venue you are visiting when part of a touring company

Will know the house patch and kit

Some places and venues have a mixer that has a perfect ear for sound

Desk Mixer

Commonly a musician

A band may hire their own mixer that tours with them, this person may adjust their equipment so that it is best for the band, typically at a festival

Stage Sound Systems

Monitor Mixer

Communicates and responds quickly to sound problems

Best ear and cant have a large ego

Should be thick skinned

Bands can be hindered by a bad mix

Foley Artist

Creates specific brief of the script or sound designer

Reimagines sound effects

Removed from theatre space

May work in radio and film

Stage Sound Systems

The Equipment

- Central
  - Mixing Desk
- Input
  - Musical Instruments
  - Laptops
  - Microphones
- Di Boxes
- Cables
- Output
  - Speakers
  - Amplifier

Stage Sound Systems

Analogue



Analogue, Digital, Studio, Theatre

Each entity can be controlled at this central point

Mixing Desk - Analogue & Digital

The central point for the PA/sound system

Inputs and outputs plug into the desk



Digital

Stage Sound Systems

Computer media is now a common place input for sound

Qlab is the industry standard for running sound effect cues

Laptops/Phones

Will need to be Di’d

Some wil have a stereo or mono output

Some may need to be microphones

Musical Instruments

Precious to performers and should be checked when plugging and unplugging

Electrical instruments Will need to be Di’d

Stage Sound Systems

Microphones

Check phantom power is on before using

Microphones should be placed behind speakers to avoid feedback

3 main types in music
All require phantom power - 48V

- Condenser
- Dynamic
- Ribbon

- Shotgun



- Instrumental
- Radio
- Vocals

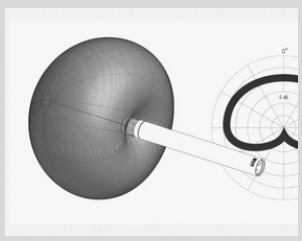


- Omni Directional



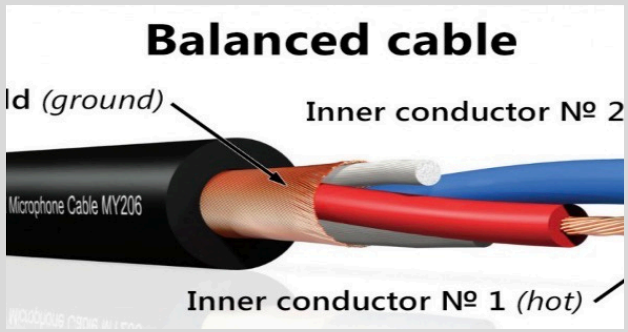
Figure 8

- Polar Patterns
  - Cardioid
  - Super Cardioid





Stage Sound Systems





Cables

unbalanced

Balanced

Speaker cable

Big jack/ 3/4 inch jack

XLR

Powercon

Mini jack/ ¼ inch jack

Speakon









Amplifiers

Rated in Wattage

Need to be well suited to the speakers you are using

Another way to control sound output (Sound)



Stage Sound Systems



Generate the HF

Generate the mid range frequencies

Powered by a separate amplifier

Needs power for the internal amp

Tops

Passive

Mid Range

Active

Speakers

Subs

Generate the LF

Come in a variety of sizes

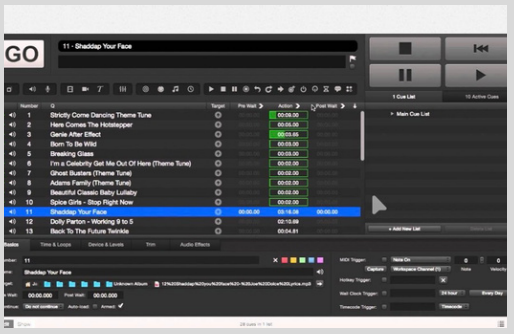
Line Array

Stage Sound Systems

How to set up equipment

The room you are in and acoustics

What to do in rehearsals, get ins, technical rehersals and shows

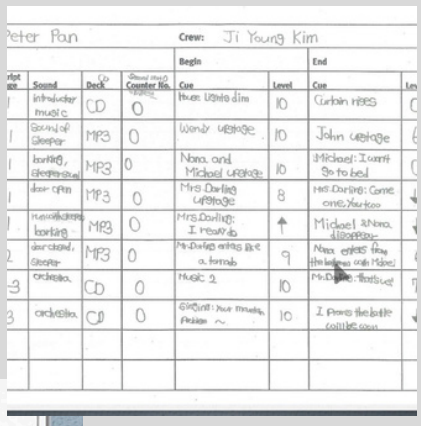


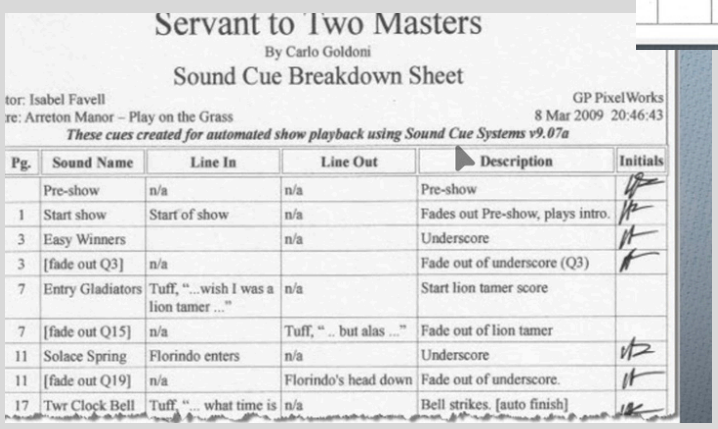
Qlab

Techniques

How to lay a cable and coil one

Paperwork





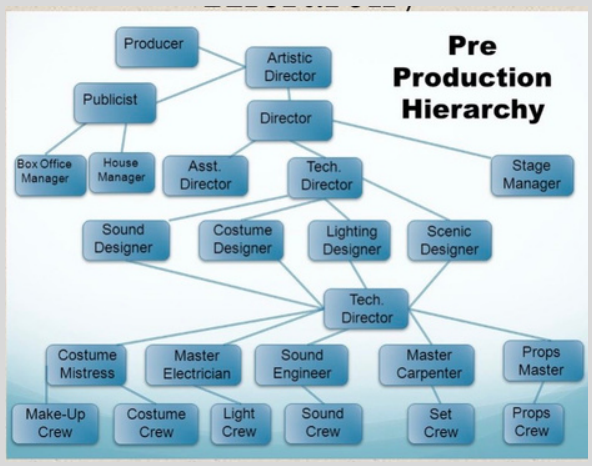
Working at Height

Heavy lifiting

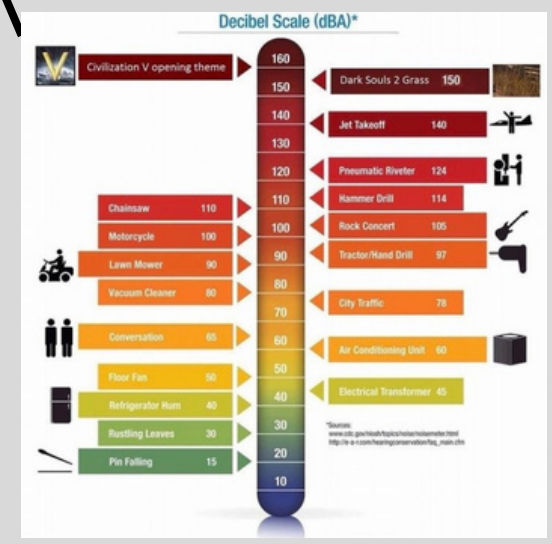
Managing people

Health and safety

Being mindful to other departments



LOUD NOISES!



Stage Sound Systems

Initial cues/effects in the script

Script breakdown, analysis, plot etc (design principles)

Moodboard

Paperwork

Build show on Qlab for rehersals

Test with SM & Director approva

Cue sheets with notes on cue lines in and out - saved to cloud

Initial read through to be attended by everyone (Meet and greet)

Notes to be made now you've met the cast

Grab a quick chat with the team you will be working with, especially if they are new

Read through & Rehearsals

Plan when to attend rehersals and keep in contact with the SM for any runs that may happen

Set up any tech in the room that may be needed

Be prepared to cover scene/costume changes

Stage Sound Systems

Production Week

most of the time should be spent in the theatre setting up, or checking the set up is correct

If rehearsals have gone well and the director is happy

Incase there are any changes that could have a knock on effect

If there is a run through you MUST attend

Have a working PA in the rehearsal room so you can show the director your sounds

Not in headphones or through small speakers

Be prepared for long hours and a stressful enviroment

Stage Sound Systems

Check everything is powered on and working

Preset 1 hour prior to starting up, have up to date paper work plus copies

Backups ready to go

Tech rehersal

Be nice, Be happy, Be alert, Be helpful, Be friendly

It takes as long as it takes

What type do I need

What do I need

Where do I get it from

Choosing the correct equipment

Whats my budget

Hire??

Stage Sound Systems

You need to join PRS and notify what tracks are played and where

Not needed for Royalty Free Music

Diffferents types of licenses depending on intended use

PRS License (Professional Rented Sector)

Check if venue has license

A licence for music played in a canteen or restroom costs 14.99 pence per day, per unit of 25 employees. So an annual licence for 250

Discussion with director

Moodboards

Initial ideas

How to design a show

Play and explore

A licence for music played in a canteen or restroom costs 14.99 pence per day, per unit of 25 employees. So an annual licence for 250

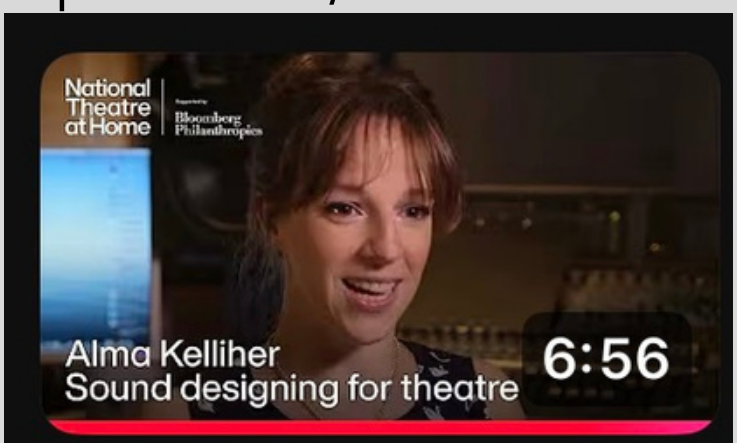
Designing Sound for theatre (Youtu.be, 2026)

sound designers often come from a technical background and therefore they may be really experienced engineers, so they're approach can be razor sharp when it comes to speaker and microphone placement

by using different technologies you extend your posibilities for example a launchpad can aid you in playing a sound multiple times whereas qlab can be more complicated

coming from a composer background Alma Kelliher as a sound designer creates many soundscapes that aid the atmosphere

Sound designers may want to spend time with performer/s



Sound design makes noise's and build's them up meaning that it can be quite Musical and rather then blocky

Sound engineer deals with technical things such as making sure everything works and balance sound

Music can give an indication of time and location of a play

Be in the sound box for the runs of productions, location of sound desk and detached from audience

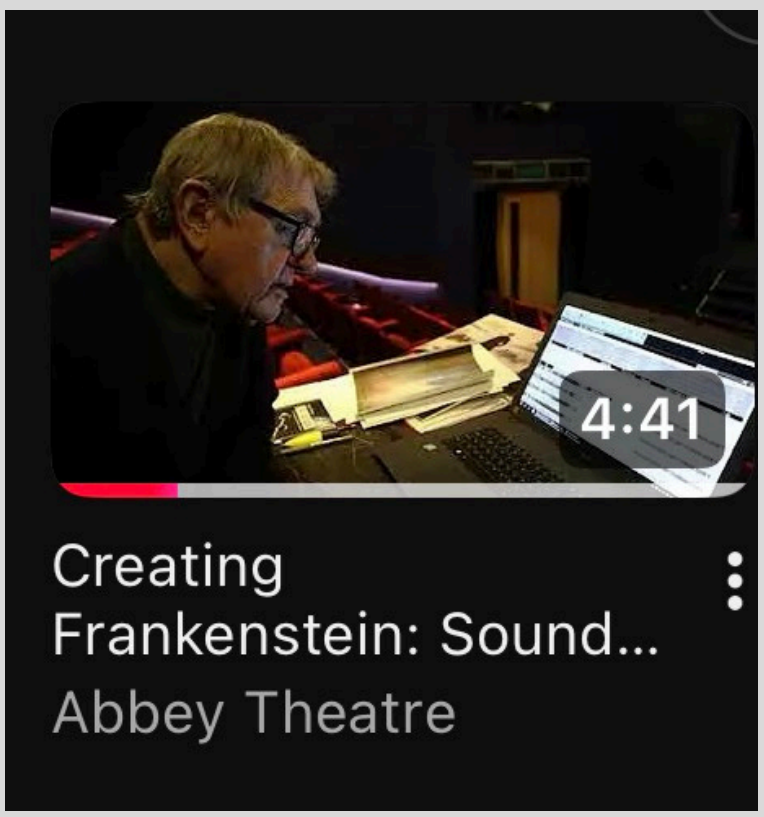
check the script for sound ques and insert any needed ones

Creating Frankenstein: Sound Design | Abbey Theatre (Youtu.be, 2026)

presence can be created by fading in a sound while fading another out

1 sound duplicated with its duplicates put out of sync and adjusted volume to creates the sound of multiple animals

During rehersals a laptop can be set up mid auditorium and connect sound controls



Have back up mics during a live show aswell as multiple mics capturing the same sound as this gives you greater flexibility

Some shows do effects live

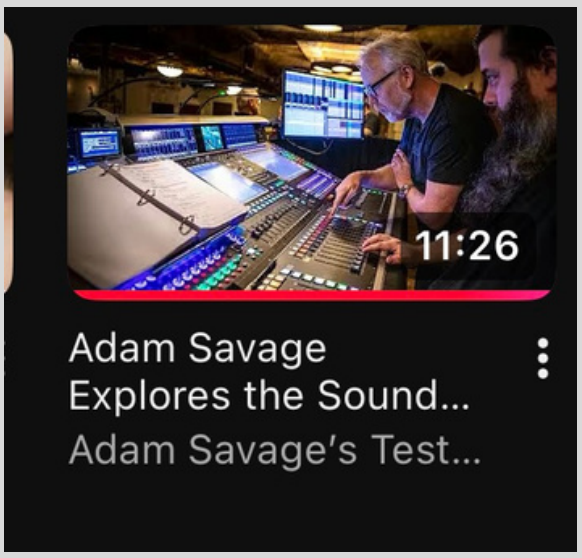
on a legacy show like hamilton when you are in a new venue you have to make adjustments and problem solve to the new place

Adam Savage Explores the Sound Mixing of Hamilton (Youtu.be, 2026)

sound mixers may layout cue's differently

every show has its own challenges with sound mixing

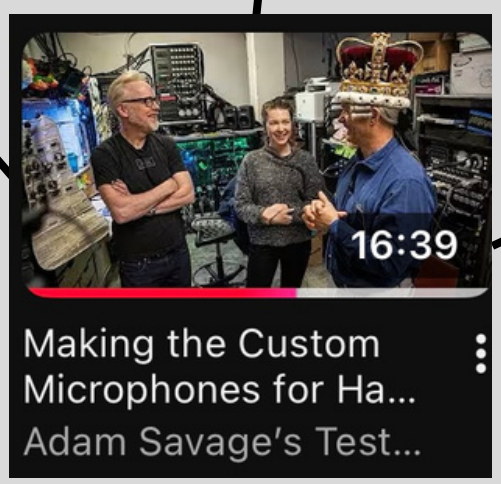
hamilton has constant sound mixing



One ear attachment features mic A and B

Custom mics are made with flexible wire, music wire

Mics are made custom to actors this means that only one actor can wear them they can also have custom skin tone and sweat protection

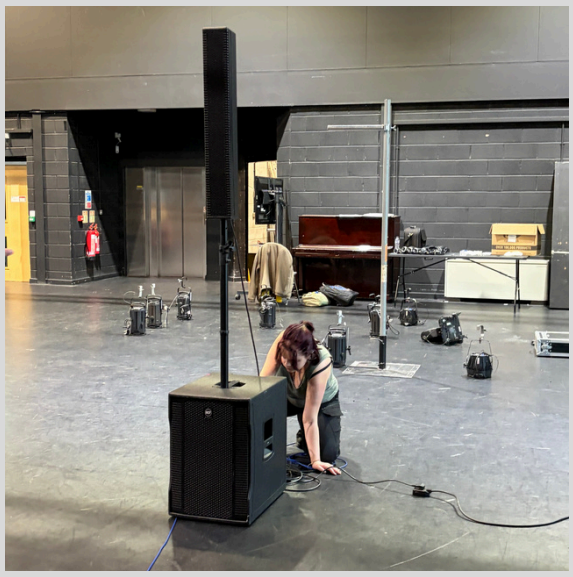


Making the Custom Microphones for Hamilton (Youtu.be, 2026)

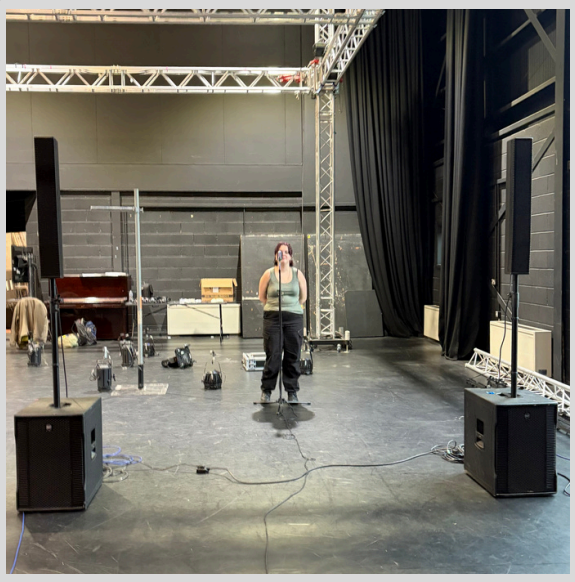
Have spair mics

Mics can be fitted to ears

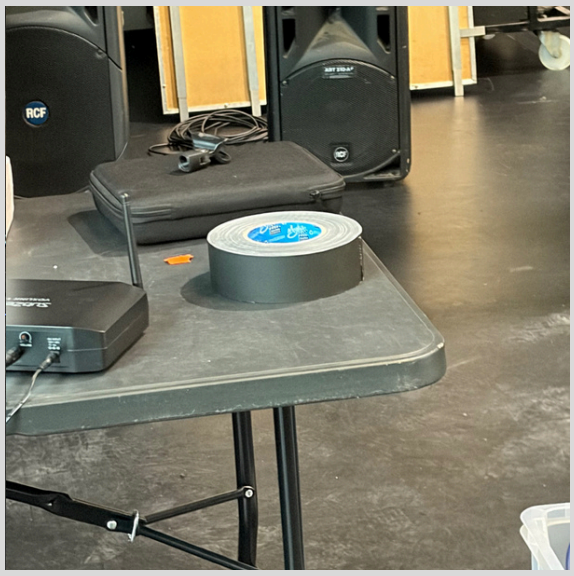
Mic’s can be fitted in hats, wigs (Hairline mic) and crowns


Once we had learnt about the different components in sound design we were given the opportunity to learn about them in person which began with a digital sound board, we then used XLR cables to plug into the table the two sets of speakers with the bottom one being a base speaker containing the amp and the top one was a high frequency speaker that did not contain an amp and was attached by being placed onto a pole that was inserted into the top of the base speaker before going in the bottom of the high frequency speaker, next we plugged a jack into the board and mac book which meant that we could play music from the mac through the speakers using the board

Next we inputed into the system a microphone by running a cord from the board to a microphone placed behind the speakers, we choose for it to be behind the speakers as the closer to being in front of the speakers a microphone is the increased amount of feedback that can occur through the speakers, furthermore this meant that as we used a wired microphone the XLR cable overlapped with the power cable of a speaker because of this the amount they overlapped was minimal so that the noise of the power cable didn't interfere with the XLR cable, after this me and Eirys each talked into and specifically said 1 2 as this covers low to high frequency's the microphone and were able to see how due to the type of speakers and that they were pointed towards the desk only someone stood at the desk could hear the microphone properly and the person speaking into the microphone struggled to hear themselves through the speaker which reflects how within a in industry situation that sound adjustments should be controlled by the desk operator rather then a musician or performer.





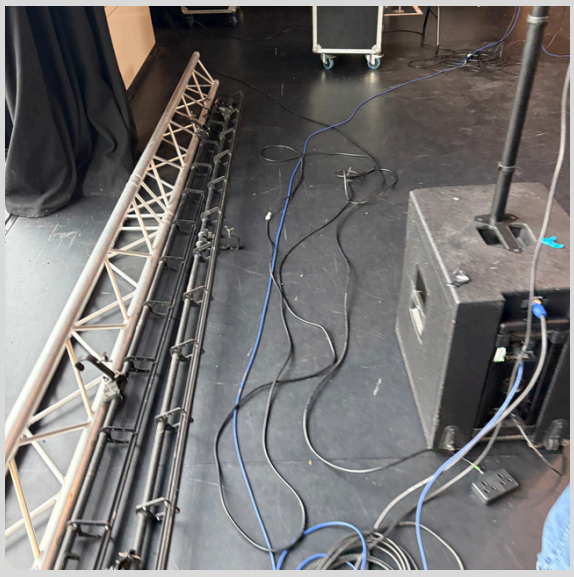


Once everything was plugged in and connected although it worked it was obviously un-tidy and in places a hazard therefore we began work on taping the wires in place using gafa tape that does not leave a sticky residue on the cables and can easily be removed after a job has been completed, this began with us pulling the wires into straight lines that form 90 degree angles in the corner, Similar to what is shown on an electrical diagram to then keep the wires in place tape is applied as shown in the photo’s

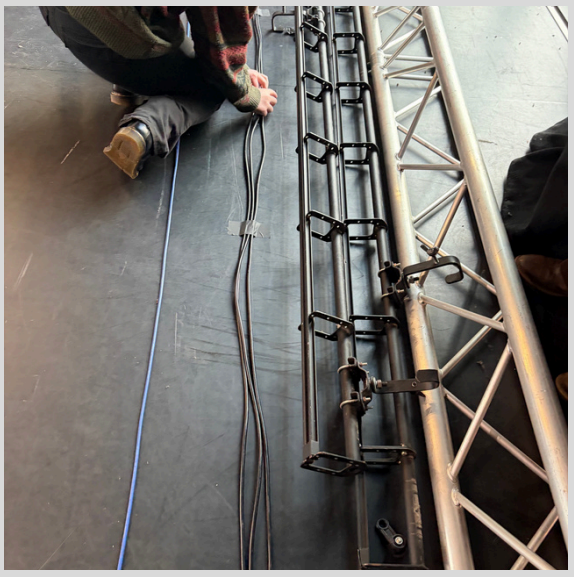




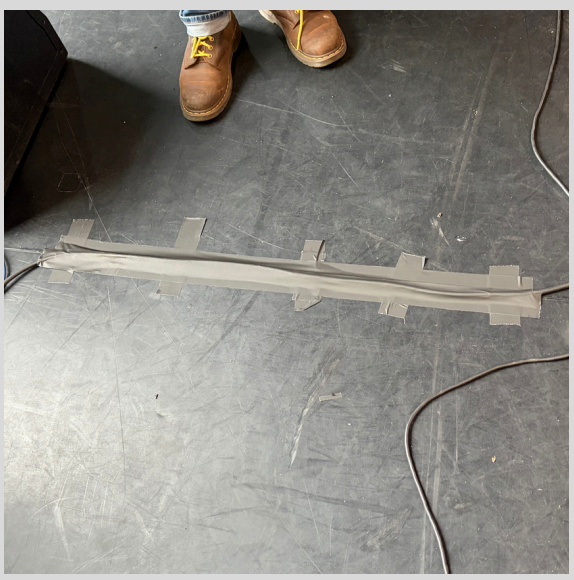
Furthermore our lecturer Dave also demonstated that if a cable is too long and leaves excess length it can be coiled near the device but in cases such as power cables it is best to make sure you have the most accurate legth as having a very long power cord coiled into a small space can generate a large amount of heat and damage the cable if used for long periods of time.







Next we organised the power and XLR cables going to the first speaker, as the power cable was long enough to to loop back and forth a number of time we arranged it so that it ran alongside its self this meant that it took up a smaller amount a space and by using the space between the power source and output this meant that the wire wouldn't overheat when taped together, the XLR cable was then taped parallel to the power cables but not next to as this could cause interferance





Then we were shown how a large amount of tape could be applied to wires and then how easily the cables could be pulled up and that when coiling the wires we should look at how the wires themselves may want to coil furthermore as well as covering wires in strips of tape to protect them you can also use d line cabler covers which help to hide wires





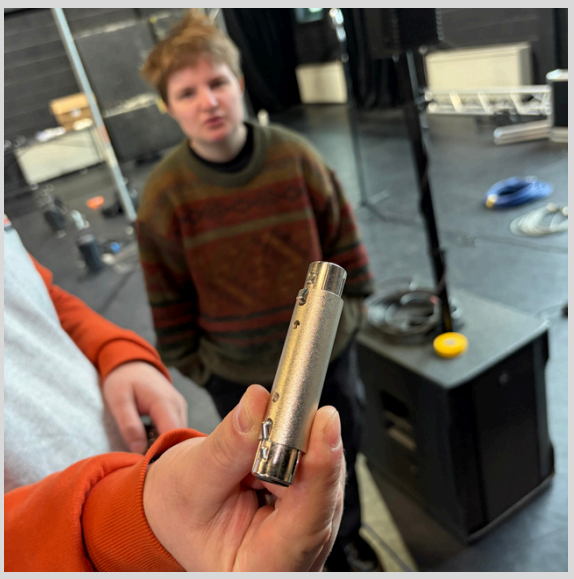


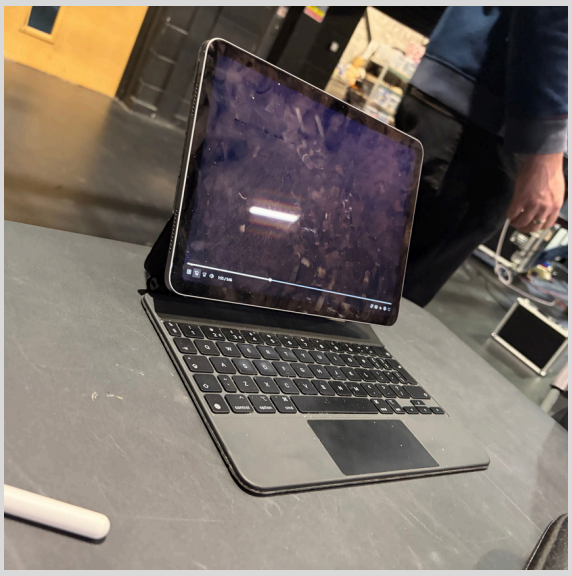
Before being introduced to the analogue sound table we were also shown a wireless microphone and although we didnt actually use it I really apprecaited being shown it as it may be somthing I need to recognise or use in the future.

for the analogue box we used a small speaker that was plugged into a the amp this allowed us to easily experiment with the directional microphone and how a microphone can cause feedback then also shown here is a Di box it was good to see in person so that I am more famillar with the device and finally I was shown a pin convertor for if the right cables arent easily available as it is a device that changes the gender, connector size or signal configuation of XLR cables.





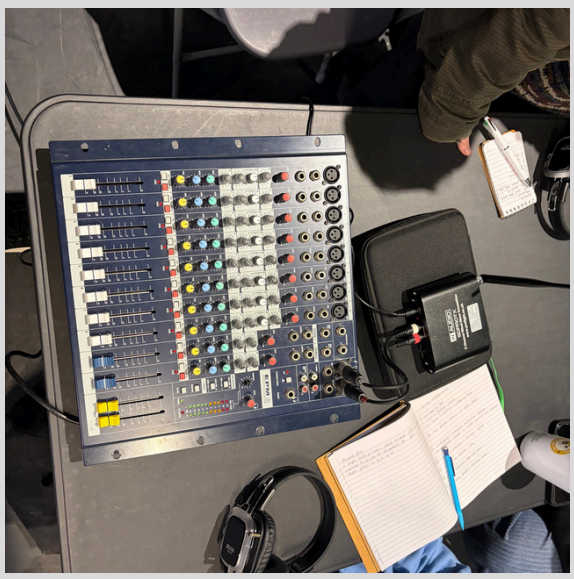












To end our sound education we split into groups and tasked with creating sound effects to join a video that has none which is often referred to as Foley

for this task we were presented with the video, headphones, microphone and a analogue sound board

We first connected the sound board to a power source before connecting the microphone using an XLR cable and the headphones by utilising their signal box which we plugged in using jack cables and set its output to channel 3 as we are the third group by also setting our headphones to channel 3 we can only hear the sounds captured by our microphone.

Sand paper being applied to wood followed by a brush, brushing away any excess for this we tried:

scratching the table with a crisp packet

scratching a notebook with a pencil



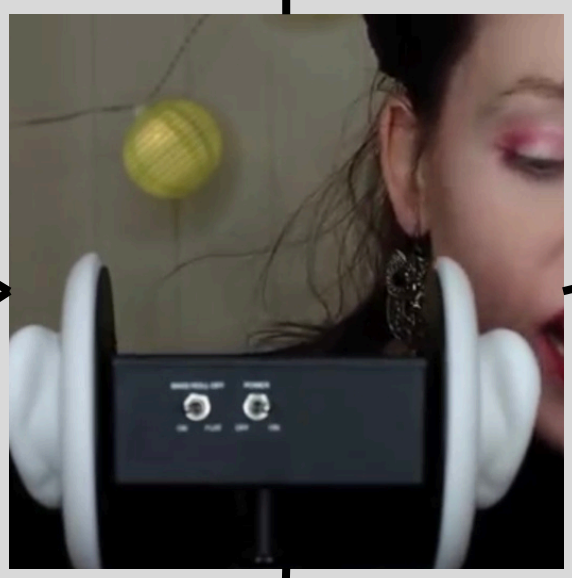
Scratching a coat hanger against a plastic chair

Sponge against a rock

We choose scratching a sponge with a long acrylic nail

Carrot chomping and chewing ASMR for this we tried:

opening tubs



Wet paper

Breaking dried leafs

We choose eating pasta while snaping wood and pressing into an orange

Walking on gravel for this we tried:

Rocks

Shaking dice



Seashells

Dried Pasta

We choose Dried pasta at the same time as stepping on cardboard

Door creaking for this we tried:

Highlighter pen

Marker pen

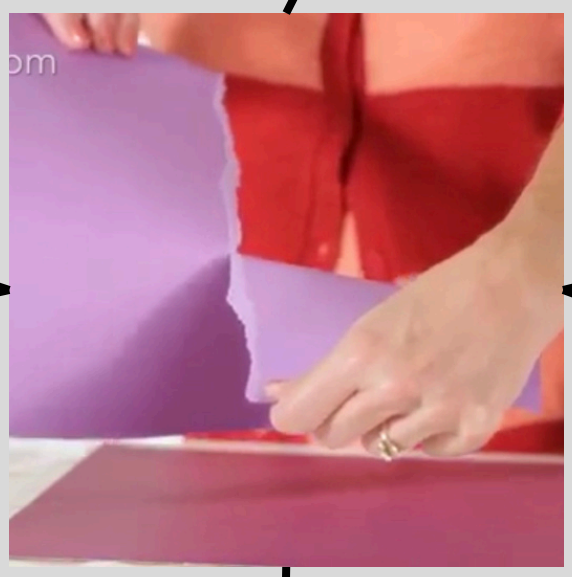


Crisp Packet

Detol hand wipes

We choose leaning back on a creaky chair before letting it drop to the floor

feeling and tearing paper for this we tried:



Leaf

Ripping Papeer

Brush paper against seashells

A crisp packet

We choose running a finger along a sponge at varying speeds



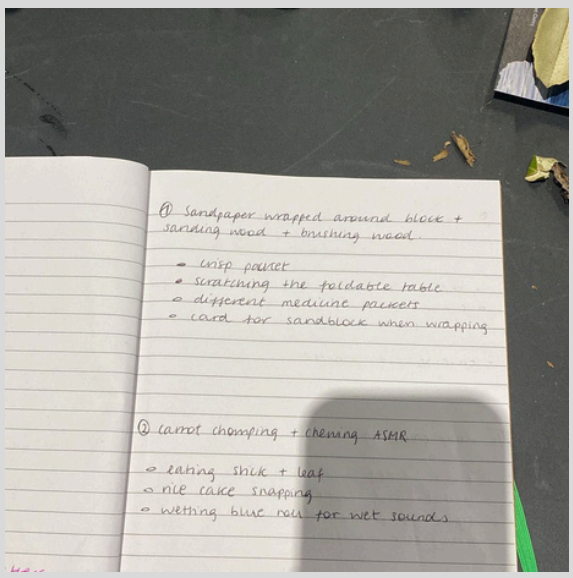


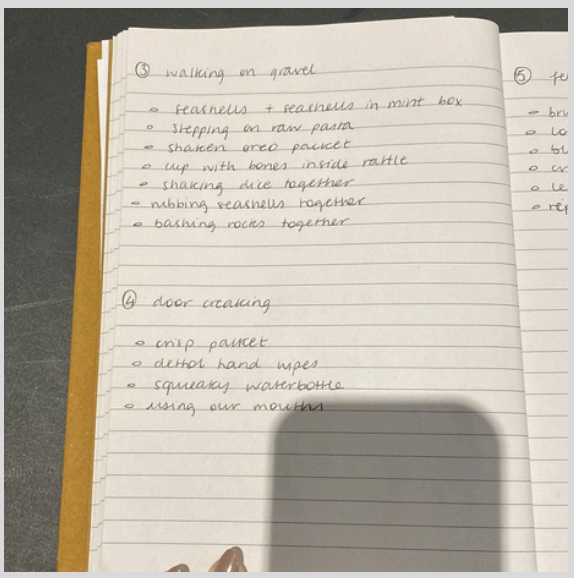




We experimented to create a number of different sounds found in our video stimuli, this included the sound of eating a carrot, tearing paper, walking on gravel, shutting a door and cutting wood

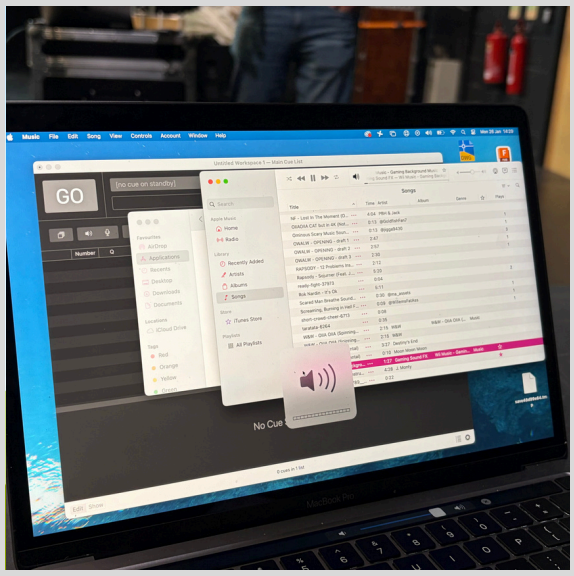


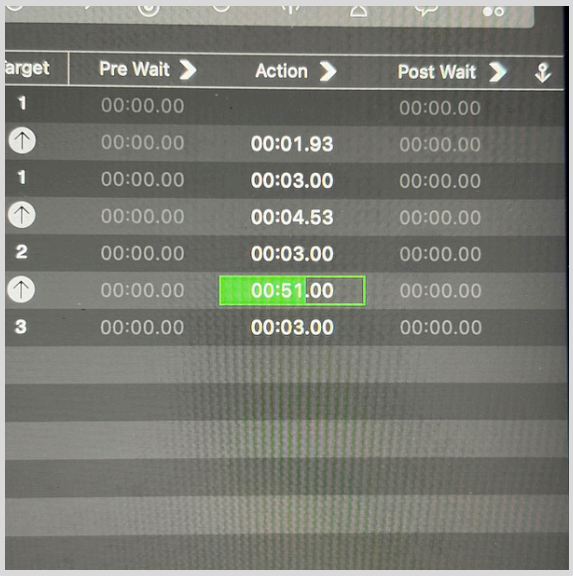


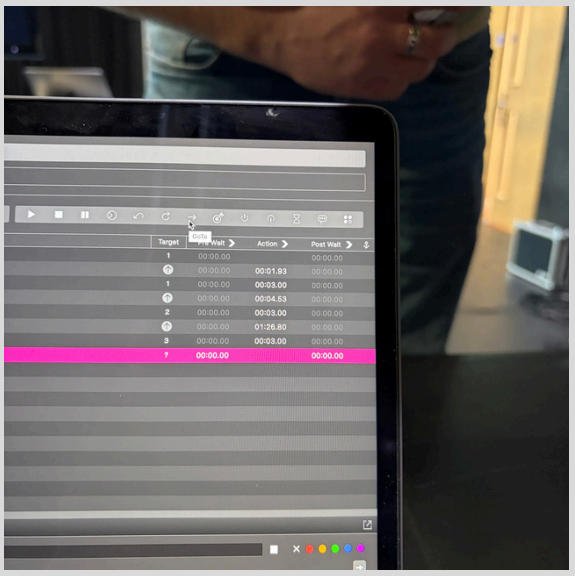


as part of experimenting to create these sounds we also timed them to video to see if they fitted before making notes about whether they worked or not and when the sound takes place.

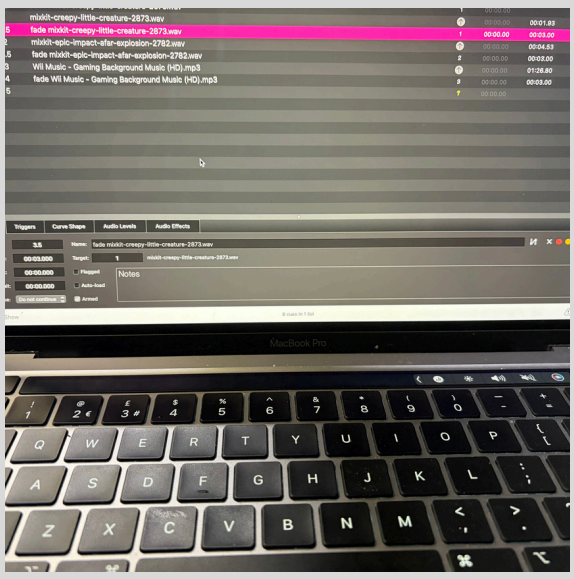
Once we found all our sounds we continued to do experiments to make sure they werent any better sound before giving the rest of our class headphones and while they watched the video we created the sounds into our microphone and sound desk where because of an audio transmitter were able to be heard through the ears of our audience when this was completed we found that it worked well but that we didnt take into account the boards ability to pan sounds and that this could have improved our work

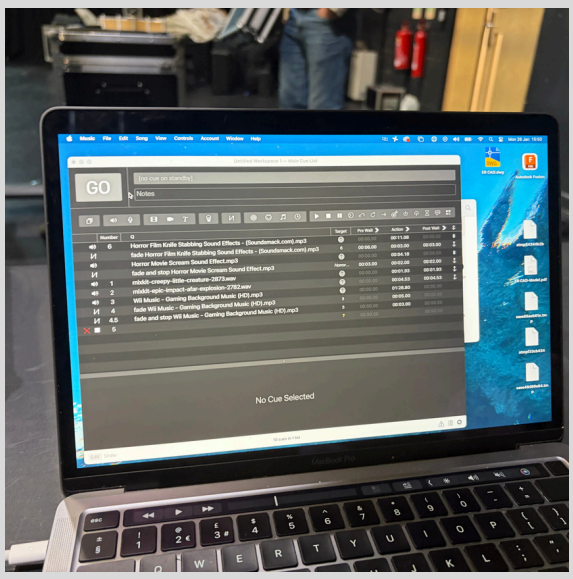


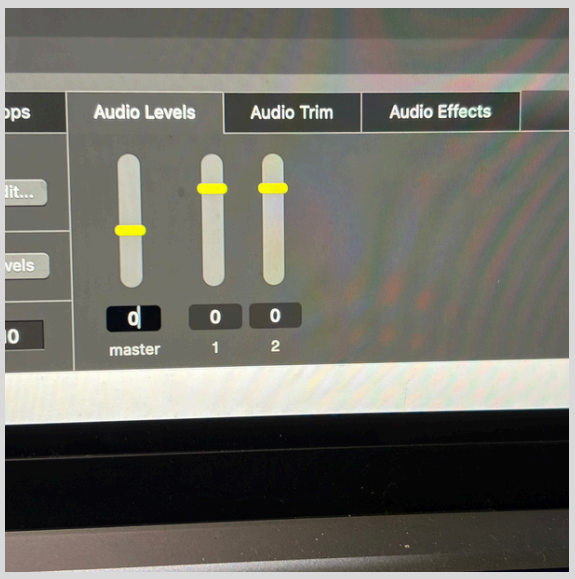




Next we were introduced to Qlab, which is a software for designing and playing audio and can also be used for video, light and show control cues, our initial introduction to this industry standard software began with experimentation which included taking sound bites and inserting them into Qlab once inserted we were able to see how long the audio clip was which was been played and how far through the clip it was and finally the audio clip selected was shown by a change in colour shown in the top right photo



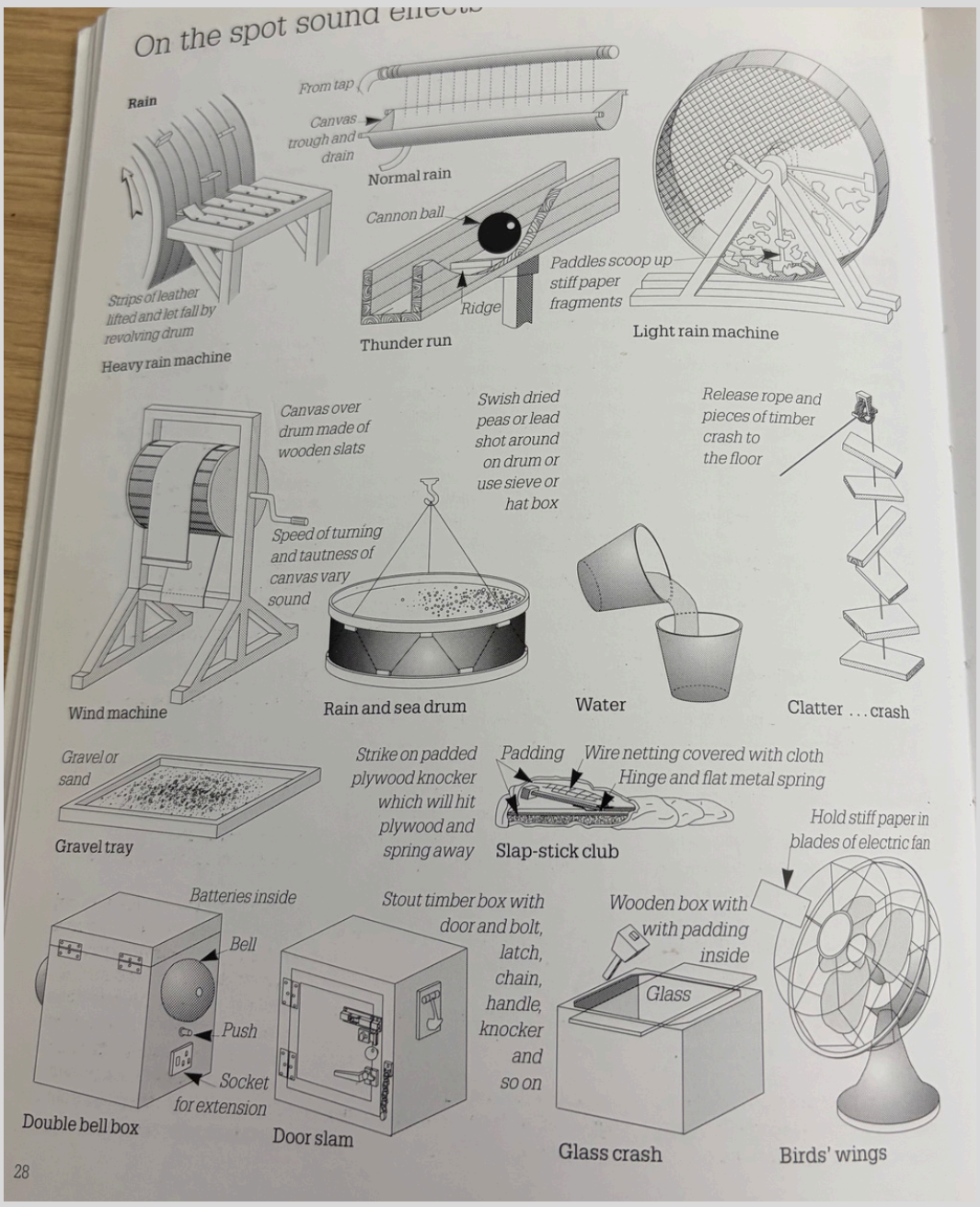




Next we learnt about the different ways we could affect these sound clips including fade ins and outs aswell as deciding when these happen and audio levels during them.

Create your own stage effects

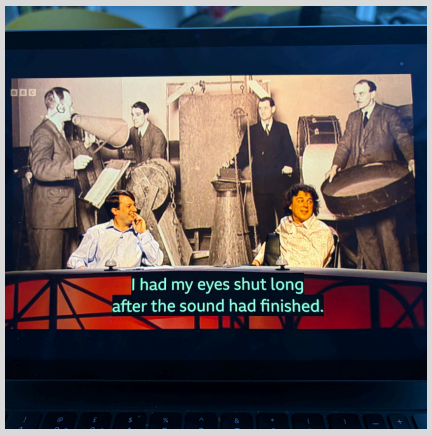
When it came to our time looking at foley my group quickly found the different ways we could create our sounds but this book has made me realise that sound effects can be made in a number of ways with examples of this being present in the book Create Your Own Stage Effects (Davies, 1999)



(Gill Davies, 1999,pp. 28,illus)

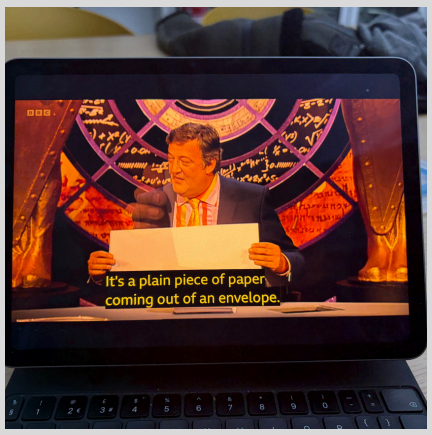
And as shown by the diagrams on the left these sounds are often created in a number of unexpected ways for example the sound of rain can be made with strips of leather lifted and let fall by revolving drum showing how it is not always a simple soloution aswell

Qi Foley

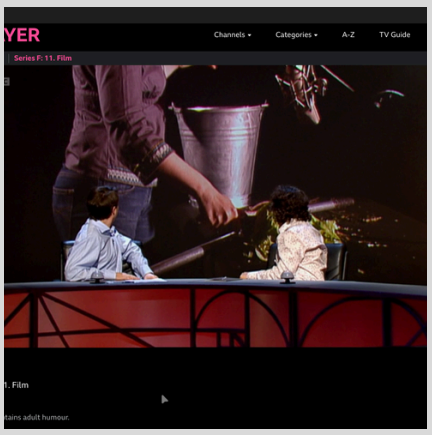












(BBC iPlayer, 2022b)

(Qi, 2009)

As part of my further investigation into foley I watched Qi otherwise known as Quite Interesting a long running British comedy panel game quiz show for televison which at the time of this season was presented by stephen fry.

In this episode they focus on film as a topic and this includes Foley with the preseter educating the panel and contestants on how different sounds can be made.

A sound I found particularly interesting is the gulotine which is shown to invole not just an axe but a fresh ball of lettce

Doctor who sound design



Julian Howarth
Sound Recordist

Is present on set during a production and aids in the capture of all the sound from the performance this can be done in a number of ways and shown below is an audio recording device.



Jeff Welch
Boom Op

During the production of a Tv series specifically doctor who sound is captured in a number of different ways, and boom mics allow them to gather multiple inputs of audio at the same time



Bryn Thomas
Boom Op

Aswell as what has been previously mentioned boom mics are operated by people using long rods so that they can be close to the actors but out of the cameras shot



These are commonly used as they allow the sound from multiple types of microphones to be used at the same time ranging from microphones that have been personally fitted to the actors to large boom mics that loom over head further more as shown on the screen it also shows exact information about the noise being Picked up by the mic including its volume this means that if an actor is being too loud it can be easily caught during filming rather then continuing to be a problem during editing



Paul McFadden
Supervising Sound Editor

During the recording certain scenes had multiple recordings which were done for a number of reasons but they also allow Tim Ricketts as Dubbing Mixer to make certain adjustments such as delaying when a character speaks furthermore by having seperately recorded audio internationally shown shows like doctor who are able to give dubbing studios all the audio except the english actors for dubbing to be done



Tim Ricketts
Dubbing Mixer

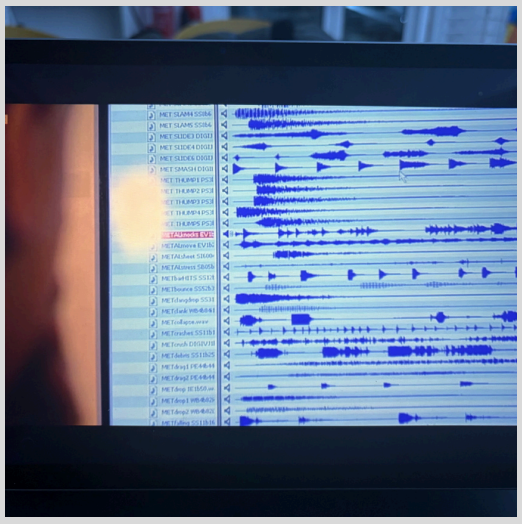
A dubbing mixer otherwise known as a re-recording mixture specialisies in post production audio engineer who balances and mixes dialogue, sound effects, foley and music to create the final audio and sountrack for the shows episode.



Doug Sinclair
Dialogue Editor

Part of Pauls work as Supervising Sound Editor on this episode included working on ADR otherwise known as Audio Dialogue Replacement which is done after the filming of an episode when sounds need replacing commonly by an actor speaking into microphone while timing their lines to the already done recording





Paul Jefferies
Sound Effects Editor

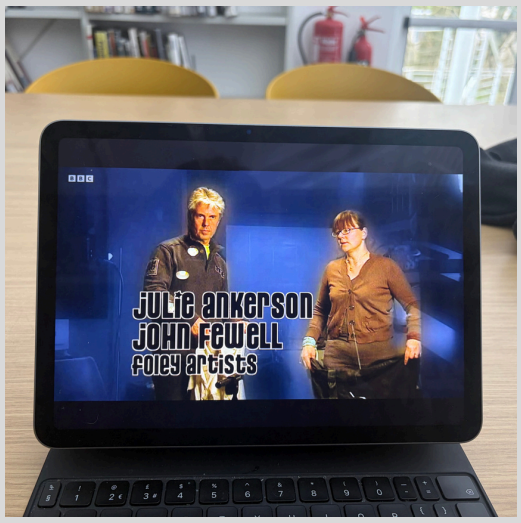
As sound effects Editor Paul Jefferies was presented with the on set recordings and inputs sound effects over top with a particularly interesting part of this being that as Doctor Who has now continued for over 60 years the sound effects editor has sound effects from across the 60 years



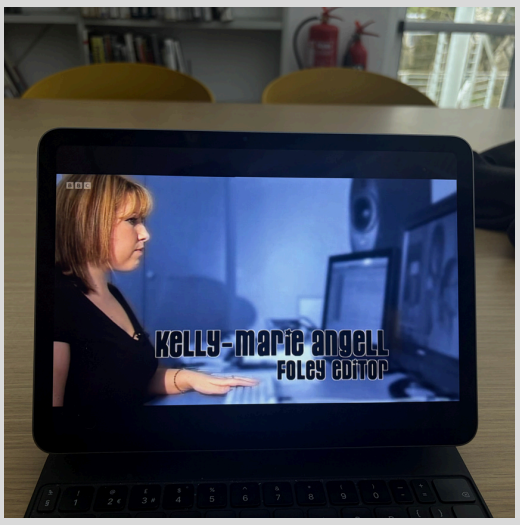




An example of how the sound department completed work on set during the filming of the doctor who episode “Midnight” which is described in the BBC’s synopsis as when “The Doctor is trapped on the planet Midnight, and the knocking on the wall begins…” this reflects how sound is a central part of this episode including that during the filming as shown in the photos above a member of the sound department creates these sounds on set then someone such as Paul Jefferies who was the sound effects editor is able to create the sounds for the publishing of the show



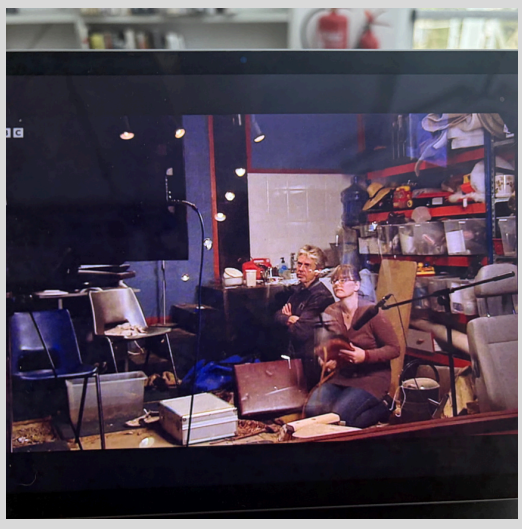
John Fewell
Julie Ankerson
Foley Artists



Kelly-Marie Angell
Foley Editor

Doctor who's sound department is not always able to pick up Every sound on set and needs sounds that dont already exist for a variety of reasons such as ships or monsters, therefore foley artists are needed to create these sounds for the show.

A person who works alongside the foley artists during post production of the show to insert their sounds into the audio



The foley Artists often have a dedicated space as shown above in which they will have a large variey of objects that are either easily available or needed regualrly, these sounds can take a number of different forms from commonly heard sounds to new and experimental sounds





Furthermore at times foley is used for many sounds that an audience may not even consider for example The Doctors sonic screwdriver a device that at times he is constantly using or fidling with but its sound is done during post production with the handling of a corkscrew bottle opener



Another example from this episode of how sounds an audience may not consider are created is an actresses pearls which as shown in the left photo were created after the filming of the episode

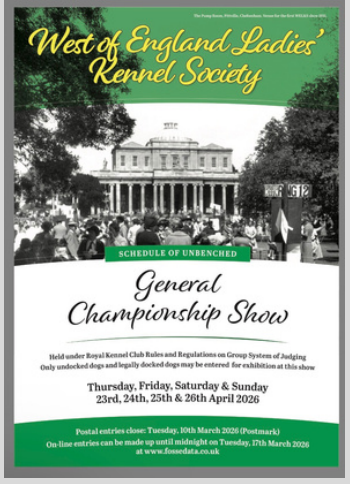


Whereas shown here is an example of neccessairy layering where the audio is created in different layers which are then put alongside the video so that the sound isn't limited by the staff available at any one time



A foley I personally found particularly interesting was this phone as during the scene there is only one actor present and yet the foley sound is still needed

While learning about sound I was able to speak to Caroline Friend-Rees the secertary of West of England Ladies Championship Show an annual dog show in malvern that welcoms roughly 12 thousand people and 7 thousand dogs.



(XLE Event Services, 2019)

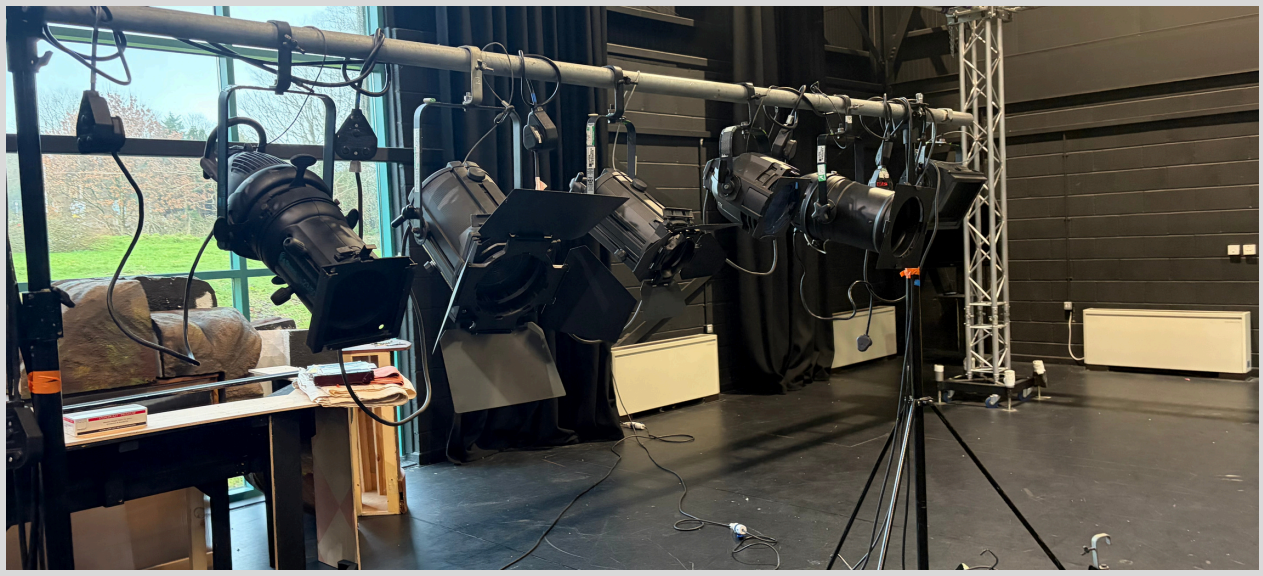
(and, 2026)

with the majority of the dogs competing for champion titles, unlike theatre and concerts who use audio to entertain the majority of the time dog show's like welks utalise many of the same items to ensure running of their event aswell as aid exhibtors by annocing any changes to the running order aswell as when a competition is starting.

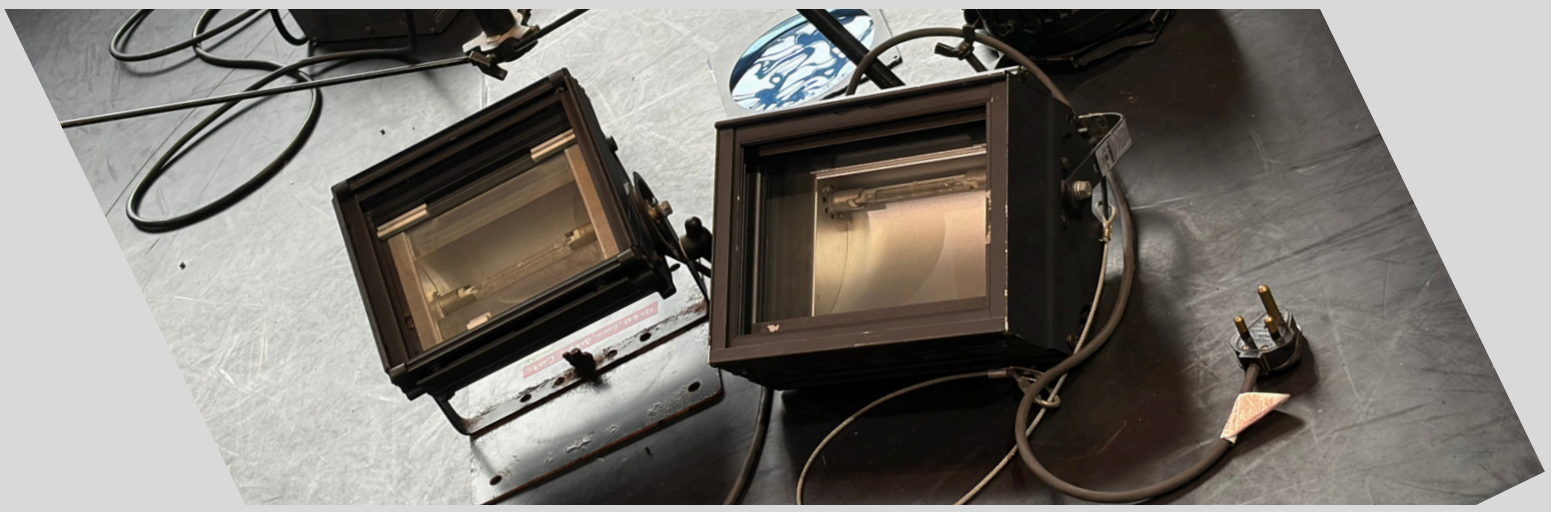
Qty	Description	Unit Price	Price
1	4 Speaker PA System	£340.00	£340.00
1	4 Way Radio Microphone System	£400.00	£400.00
1	Antenna Boosters & Paddles	£120.00	£120.00
24	Two Way Radio	£8.00	£192.00
6	Sound Engineer	£340.00	£2,040.00
1	Link to Showgroud PA System	£150.00	£150.00
1	Delivery and Collection	£195.00	£195.00
3	Accommodation 3 Nights	£140.00	£420.00

For this they utilise the company XLE Event Services a service that caters to a wide number of needs as they cater to many kinds of events including: Festivals, Football and Tennis Games this shows how sound equipment has a wide variety of uses and how people may not even be aware of what equipment is being used further more through speaking to the secretary of W.E.L.K.S I was introduced to what it costs the show to hire the sound equipment with the total cost including VAT coming to £4,628.40 to use the equipment for 4 days, this enormous price shows how despite being considered standard by many exhibitors it is an expense that the committee looks to reduce annually, furthermore it also displayed to me a barrier for many people who may be looking to start their own event of any description as for example if they require a 4 speaker PA system ontop of all other expenses they'll need to pay £350.00 money they may not have this can repeatedly effect an event as if they cannot pay for it for their first event, will they be able to pay for it for their second event and for an event that is running at a deficetie then will they need to cut sound out of their budget potential worsening their exhibitors experiences which could cause them to lose yet more money

Lighting



To begin our lighting education we were presented with generic lights these are identifiable by being halogen bulbs that give off an amber light furthermore these lights require gels, a piece of plastic to change the projected colour



These are both flood lights, but on the left is a symmetrical flood light and on the right is a asymmetrical flood light with the noitable difference being the shape of the reflector. Furthermore asymmetrical focuses light so can damage or burn back drops meaning that when lighting backdrops it is better to use a symmetrical flood light.

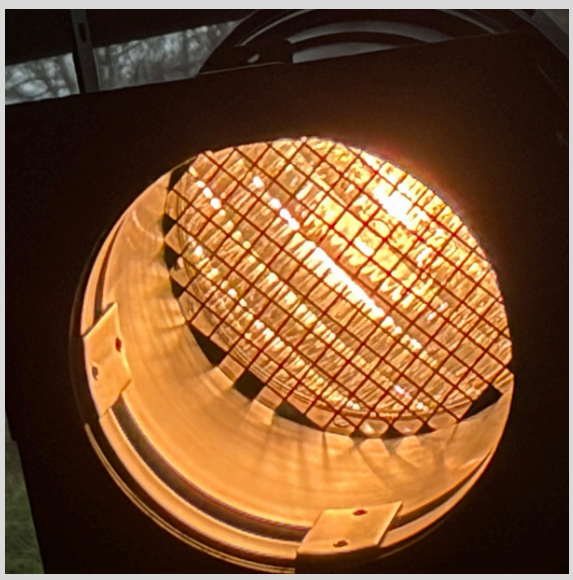




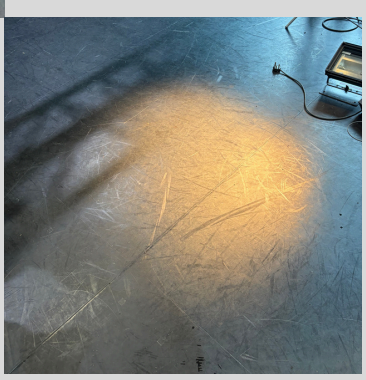


The first generic light that was shown to us is a symmetric flood light aswell as how they produce an amber light which can be counter acted using a particular colour gel to produce a white light.









Next is a par can light, as shown in the first photo it is a long cylindrical light that has reflector's within it, furthermore by turning a knob at the par can that can be seen being touched by Rox in the first photo you are able to alter the shape of the light as shown in the last two photos on the right





This is another par can, but unlike the previous one it doesnt have a barrael but does still have many of the other features present like the ability to hold a gel in place







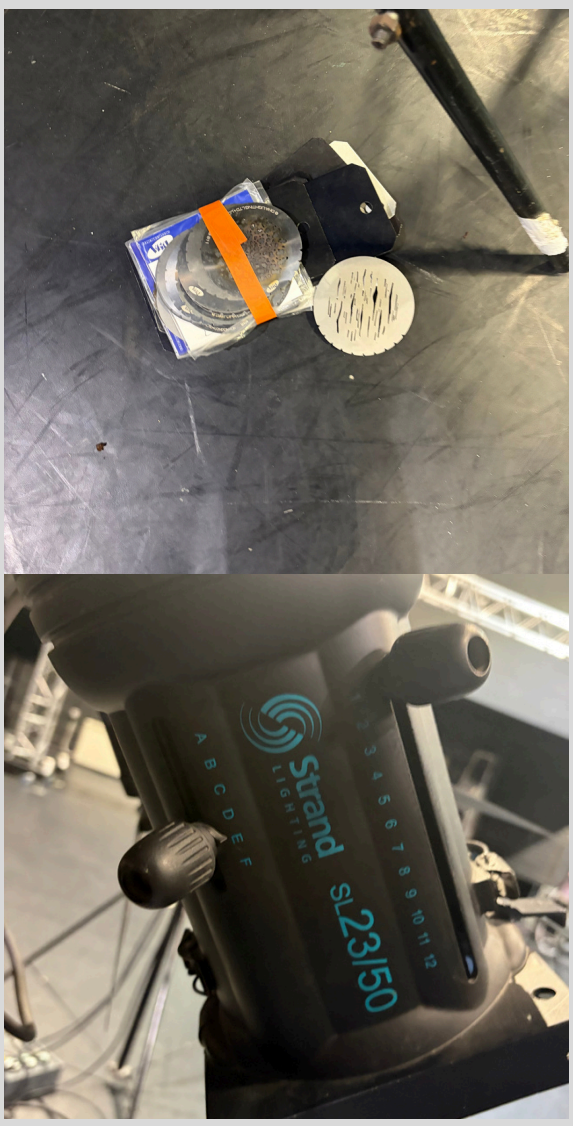
Here is another lighting fixture that has barn doors and a slider, a notable difference between the first lighting fixture and the second in the third photo is that although both are the same the second one is 500 kw stronger which is why they are different sizes







Finally was the profile spotlight that creates a uniform light where pointed, it can be adjusted by a handle at the back, has a spot to insert a gobo and a slider on the side that moves the light forewards and backwards

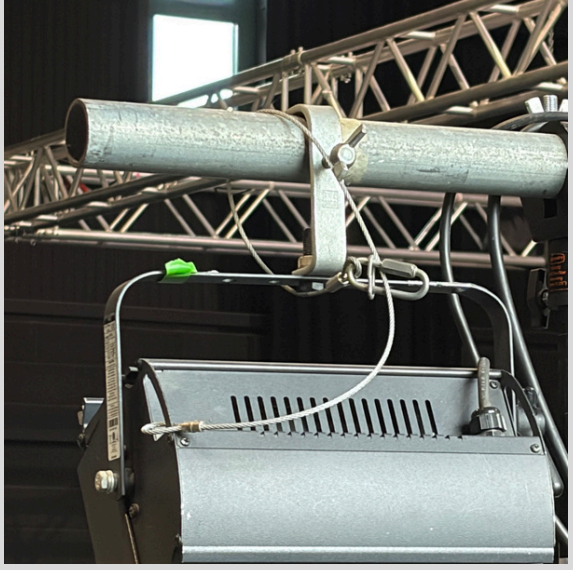






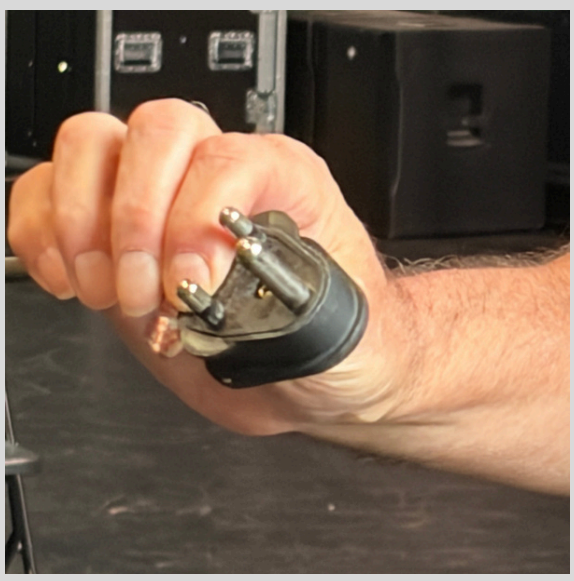
The profile spot unlike other lights can hold gobo’s a thin small metal plate within a gobo holder which is then inserted into the light, these gobo’s create a light pattern on the floor which by adjust the slider that moves the position of the light can be brought in and out of focus depending on what is needed



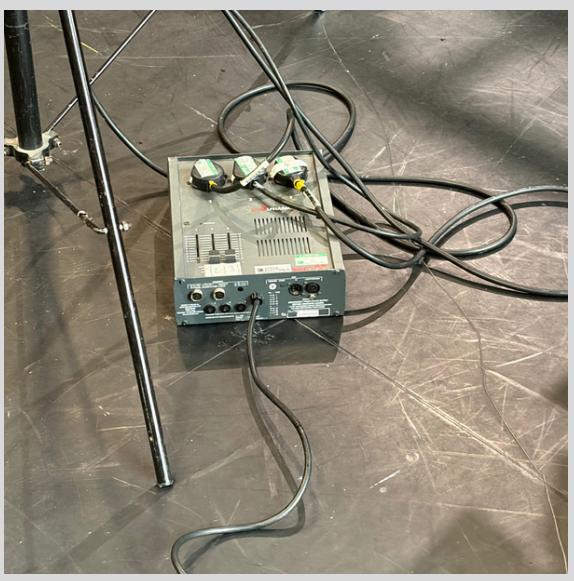


Finally we were shown intelligent lighting which refers to LED lights that are capable of much more and are alot easier to use in certain cases

We were also shown the safety measures used to secure lights, including the C clamp that hold the majority of the lights weight aswell as a metal wire that is attached to both the light and the pipe which acts as a backup if a bolt or attachment fails



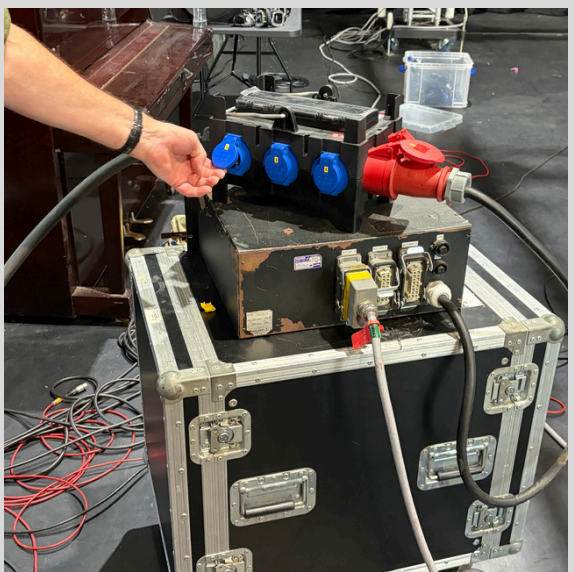




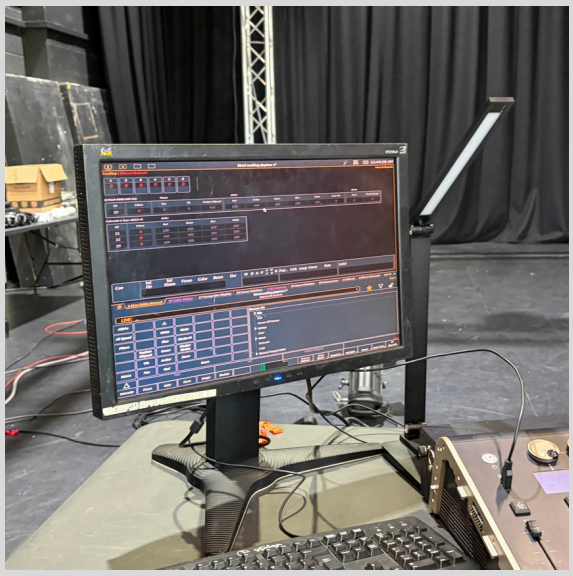
Next we were shown part of the electrical engineering side of lighting although this only included a small part of lighting I am glad to have exprienced so that I understand how the different pieces interact and their requirements, begining with the difference between standard household plugs and the rounded ones that feature on lighting cables with this differnce being the number of amps needed and that if you dont have a power source with a 16 amp plug then youll need a converter plug shown in the second photo with which you can plug a 16 amp plug into a 13 amp socket all of which can then go into a alpha boxe which allows multiple lamps to have multiple faders with the box acting as a fuse for each light
Then showed below we have high amp plugs and sockets aswell as the different brand of alpha box with this one having no sliders





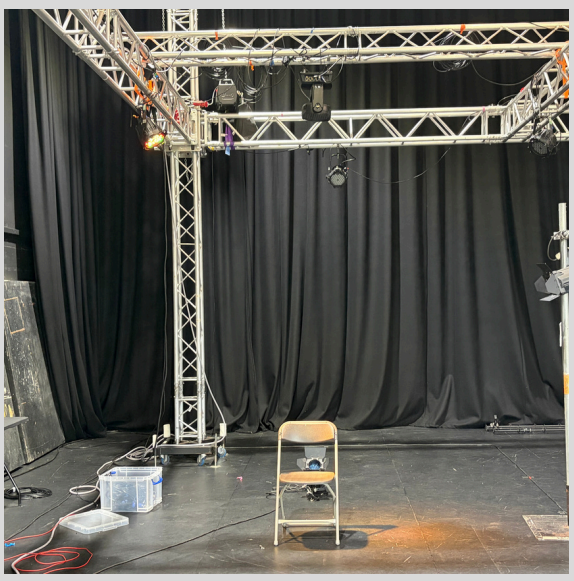


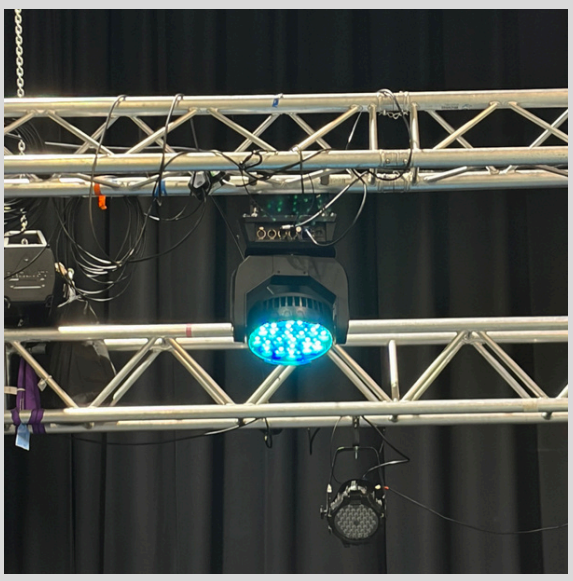






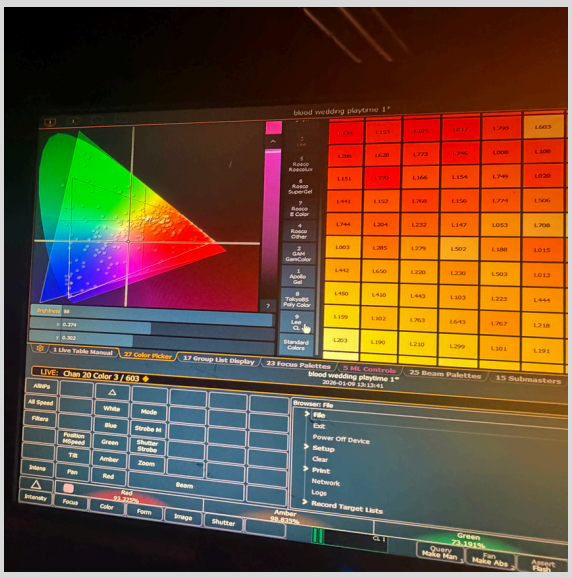
We then moved onto a lighting set up simmilar to those that exist in a theatre made up of a number of genric and intelligent lights that through a monitor and lighting board control the lights in a number of different was

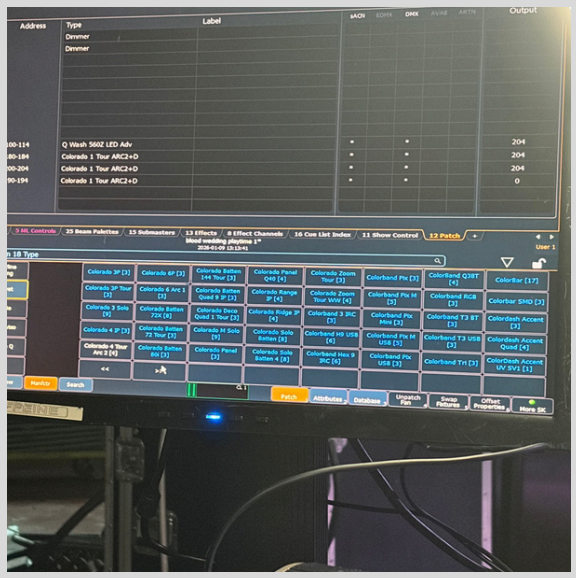




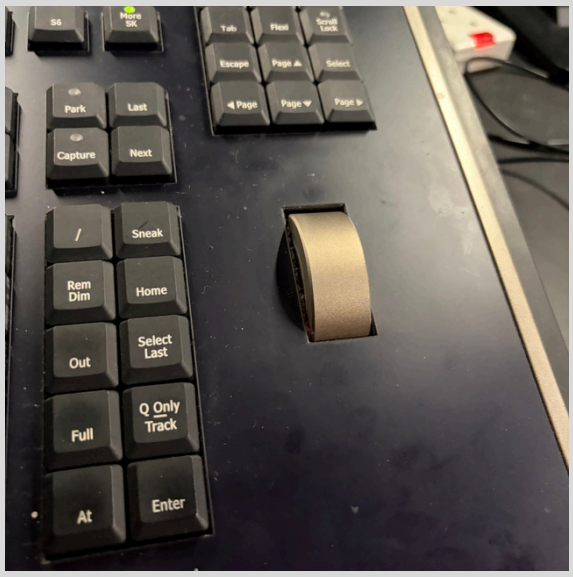
And then this was our setup a number of generic lights and a number of intelligent lights including a moving light which is the only moving light in our setup and despite its location above the chair its capability's meant that there were a number of different ways it could be utalised







During this section of this module I was lucky enough to not only be the first person to use this lighting board but to operate it while Rox talked us through the different lights this is something I greatly enjoyed doing and allowed me to learn how this board works beginning with the first photo which is the live page displaying not only the lights I can use but if I am using them and what brightness or colour balance they are with the colour balance being controlled through the colour picker page which is shown in the second photo with the third photo showing the models of lights that are and can be assigned to the desk



Wheel,

Firstly this wheel although only acts as a scroll wheel it is a very useful part of this board with it being able to adjust the intensity of the lights.

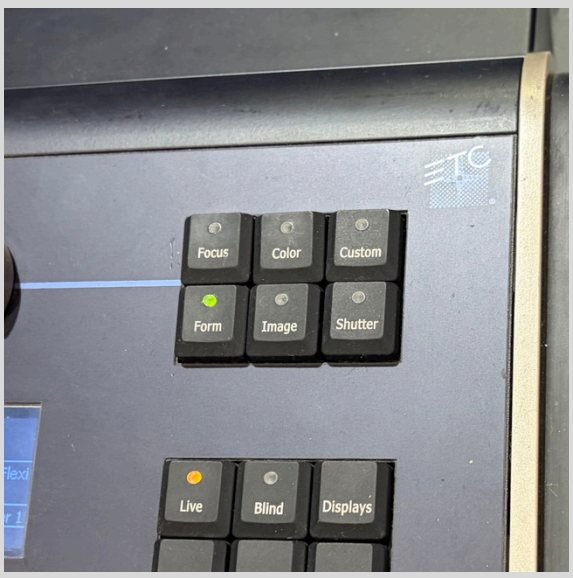


Control Board

To adjust aspects such as the the amount of Red, Green, Blue and White in led lights this screen is used displaying the amount of colour being used by the light, I found this very useful as it meant the controls and display were right next to each to easily see the results of my actions

Another part of the lighting board were a number of buttons that allowed us to quickly switch between different pages on the monitor and quickly make adjustments to our lighting

The central part of the lighting board is shown below with it containing the most important buttons in my opinion as not only did I use these the most, the lights also cant be operated without them



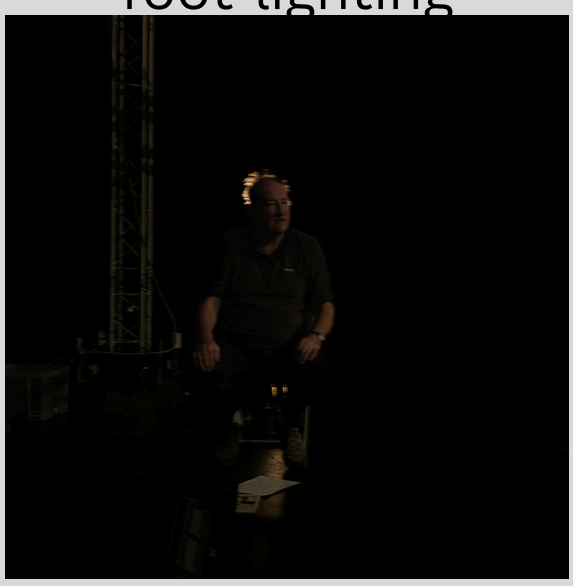




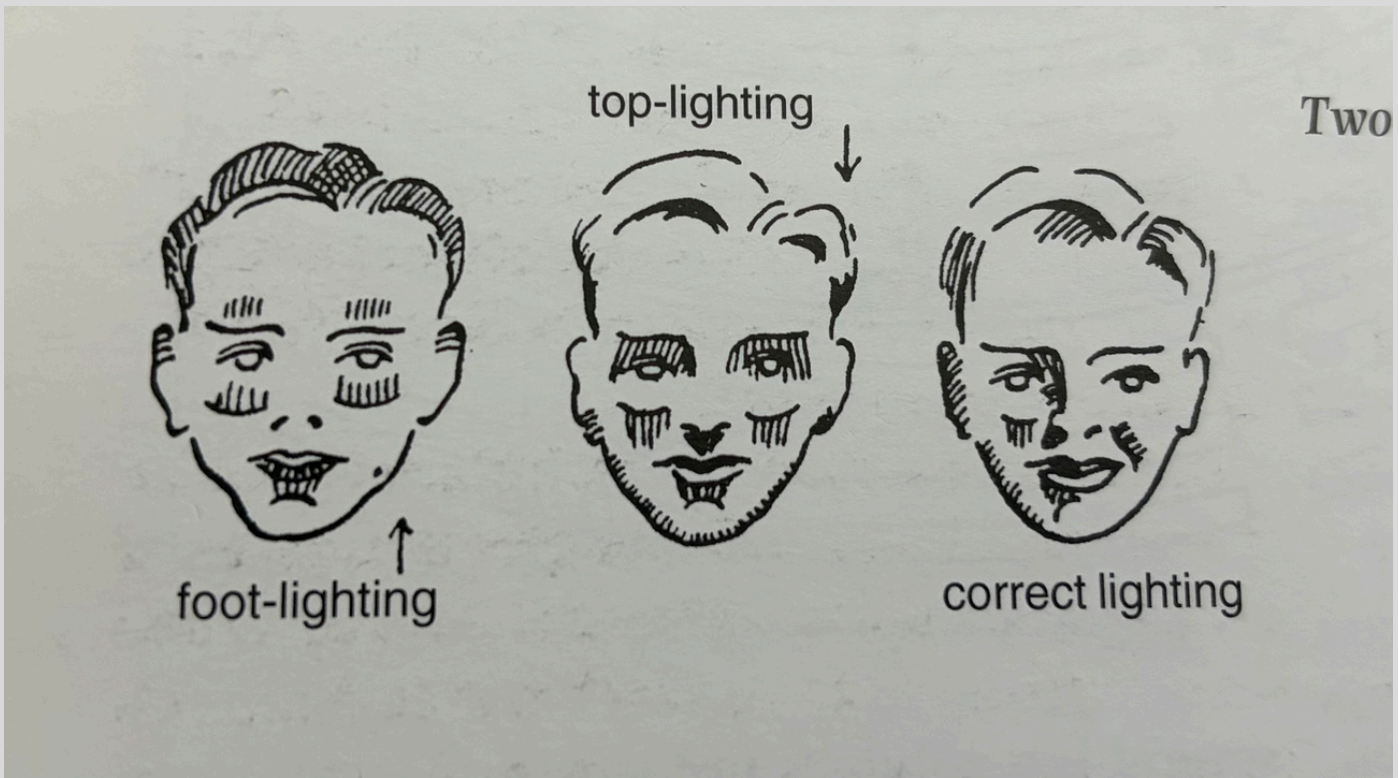


As previously mentioned I was fortunate enough to use the lighting board during Rox's examples and teaching of us about lighting this was an experience that I greatly enjoyed during this time I also learnt about how each light in our setup could be used

The different ways these lights can be used begin with light 4, a halogen - bulb par-can light with barn doors that is shown in the first photo to be pointing up at the front of the subject (Rox) from the floor infront of him which therefore displays foot-lighting


While we were learning about the different ways the lights can affect the view of someone I found the below diagram(Fraser, 2002,pp.94) a very helpful diagram that helped me to fully understand where different lights pointed at the subject would create different shadows on the face as these have a variety of positives and negatives such as have a flat face or being unable to see a persons face







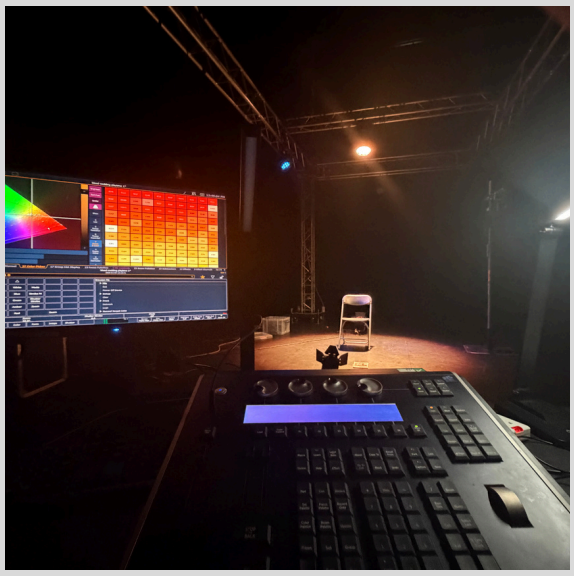


Next we looked at the different LED’s at our disposal, beginning with light 21 which as shown in the first photo is able to provide colour to the side of the subject whereas light 22 which is another LED light this time located behind the subject meaning that it not only has the ability to light the area around the subject but also its outline, The third LED light in our set up is number 23 and it as shown in the photo above is located to the left of the previous light and lights the other side of the subject





Despite also being an LED light number 20 has a number of differences to the rest, firstly the others only include the colours Red, Green, Blue and White whereas this one also includes amber, a shade Simmilar to generic halogen blubs that were used before LED’s furthermore it also has the ability to move with a designer and board operators able to adjust its pan and tilt.



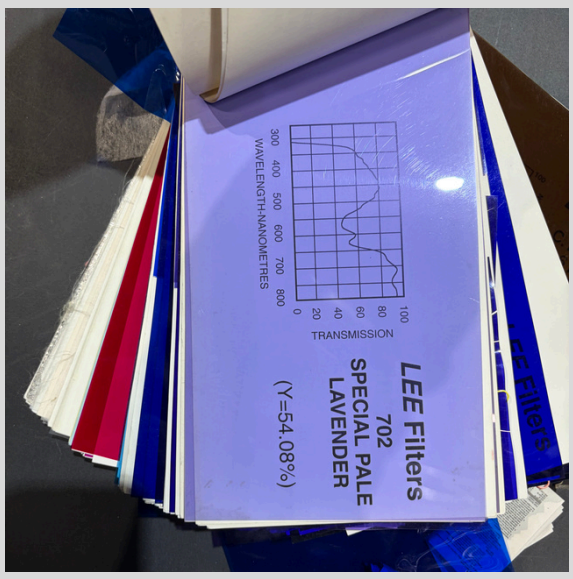




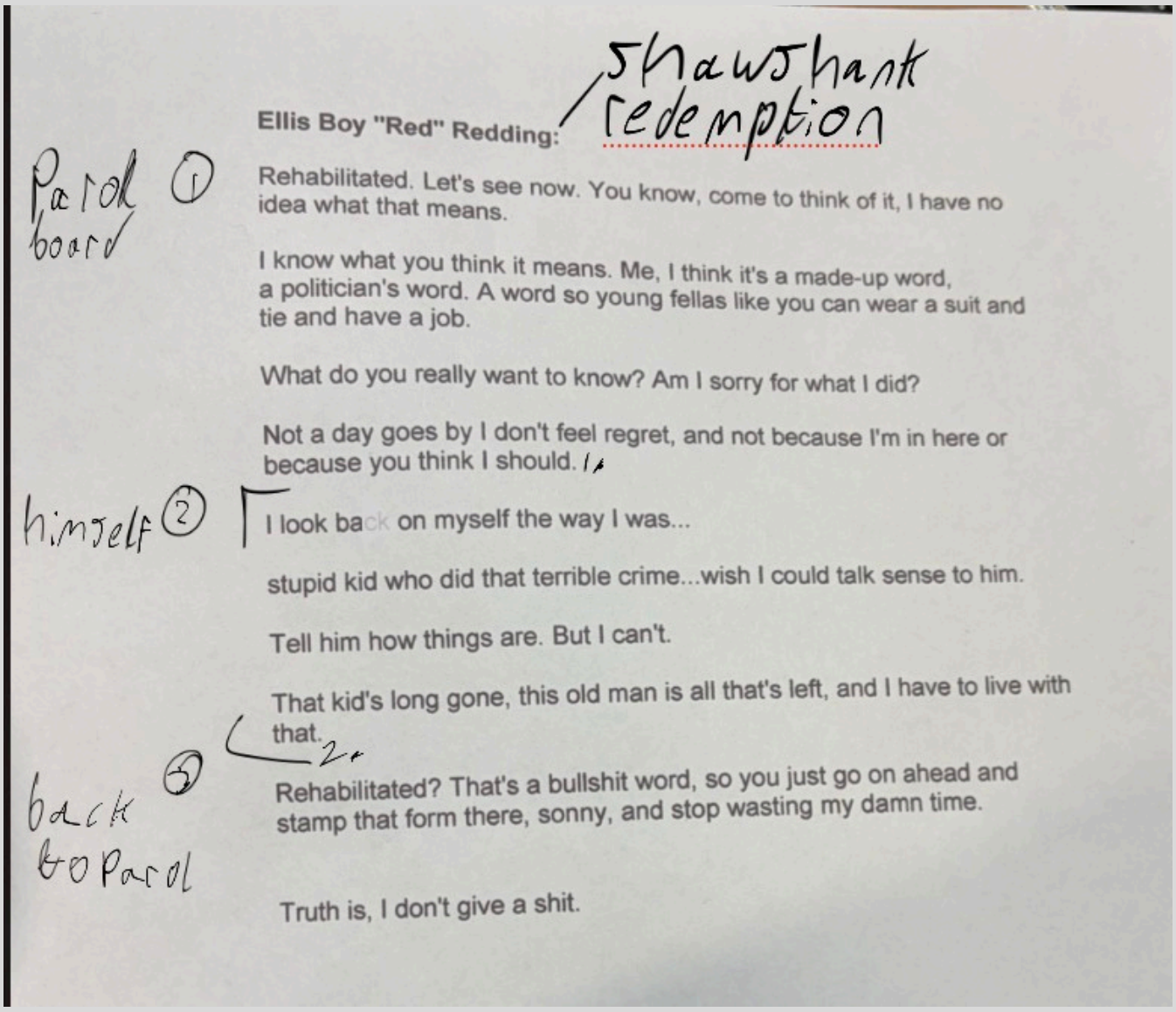
Lee Filters, are polycarbonate lighting filters that incorperate bright and powerful colourants with high quality polycarbonate as the base which alongside high colour consistancey results in filters that exhibit a good flame retardency, excellent reliability and life.

Through books like the one show in this image I was able to select a filters colour code and then locate it on the colour picker, this shows how when it comes to LED lights rather than needing multiple filters you can instead select whatever colour and tone that is needed as if you have a gel, with each colours' page including diagrams of the lights wavelengths and colour ID's.









Ellis Boy "Red" Redding: shawshank redemption

Parol board (1)

Rehabilitated. Let's see now. You know, come to think of it, I have no idea what that means.

I know what you think it means. Me, I think it's a made-up word, a politician's word. A word so young fellas like you can wear a suit and tie and have a job.

What do you really want to know? Am I sorry for what I did?

Not a day goes by I don't feel regret, and not because I'm in here or because you think I should.

himself (2)

I look back on myself the way I was...

stupid kid who did that terrible crime...wish I could talk sense to him.

Tell him how things are. But I can't.

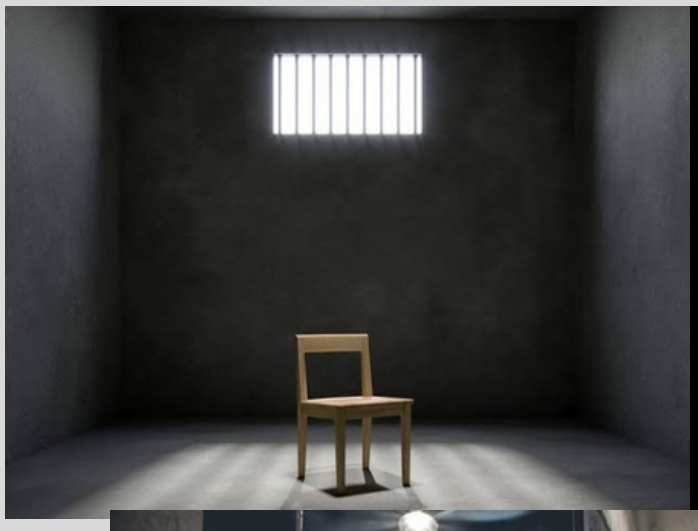
That kid's long gone, this old man is all that's left, and I have to live with that.

back to Parol (3)

Rehabilitated? That's a bullshit word, so you just go on ahead and stamp that form there, sonny, and stop wasting my damn time.

Truth is, I don't give a shit.

To end this time learning about lighting we were split into groups and told to select a script, and light it for around 90 seconds.









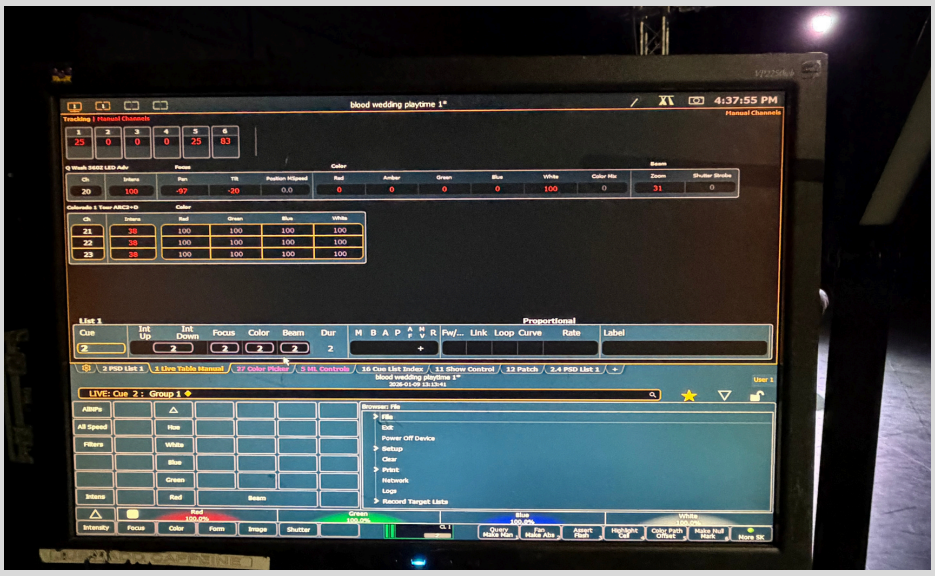






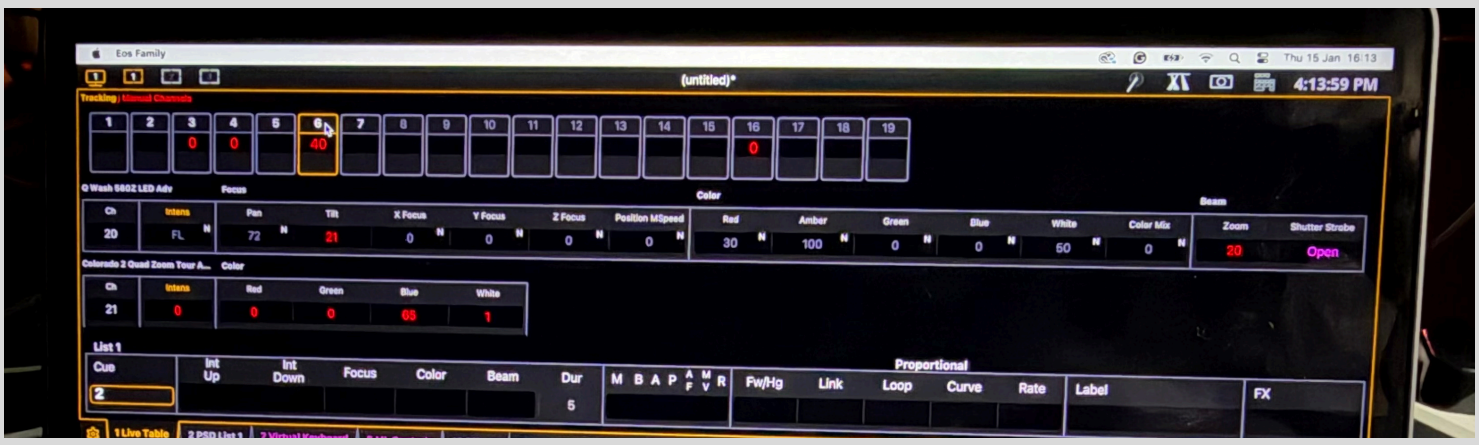
I then gathered the photos and tones I felt would best suit this scene and although most of them were more muted tones I then Choose to inlude a purple to juxapose the muted tones and convey the shift from the real world to Red’s mind





Within my script I placed 3 ques, shown above is my first, meant to portray the coldness of a parol board room while allowing the audience to view my actors face which was mainly achieved by using a mixture of LED’s and generic lights that are located infront and behind her to create realistic shadows on her face furthermore as the light from the left of the actor shined too yellow I instered a blue gel that changed the light to portray a light blue colour





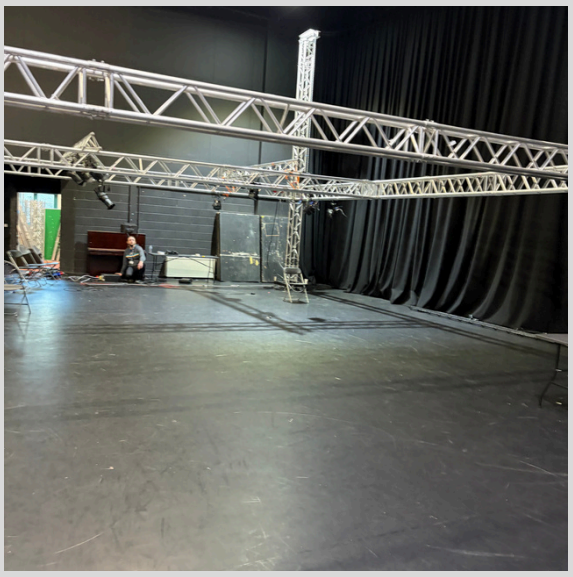
My second que is meant to portray the inside of Red’s mind and utilise a change in colours to portray the shift something that the audience understood





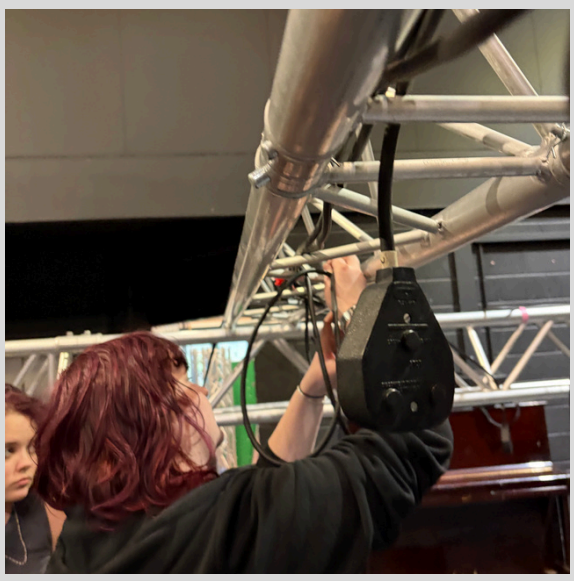
Finally just before the final line I inserted my final cue in the form of the removal of many lights from the scene and a focus on this light coming from above which due to a leaf shape gobo creates a naturalistic feel as it shines on the actor this shows my understanding of what light sources may be present in person and how these can be shown through my design and in the book Stage Lighting Explained this is referred to as “Specific Light Sources - Mention of fires, practical light fittings, a television and so on.” (Fraser, 2002) showing how I am using professional concepts within my work







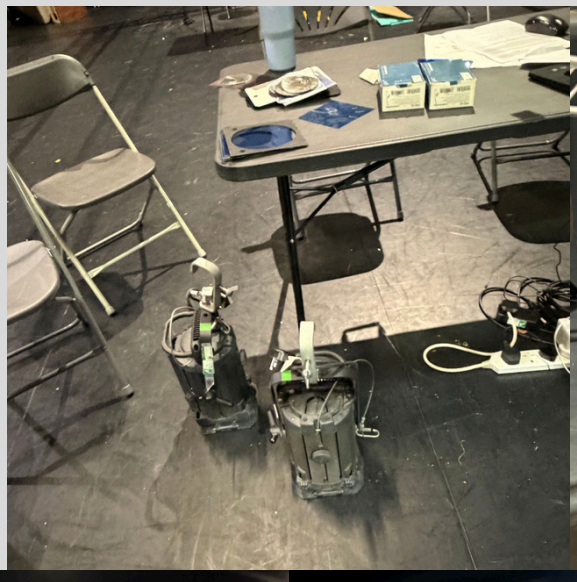
Once our independant project had been completed it was our responsibility to de-rig the lighting set up, this began by us lowering the truss so that all lights, cables and extra truss were easily reachable as although we could have used a ladder to reach them this would have a unnecessary risk that can be easily mitigated.

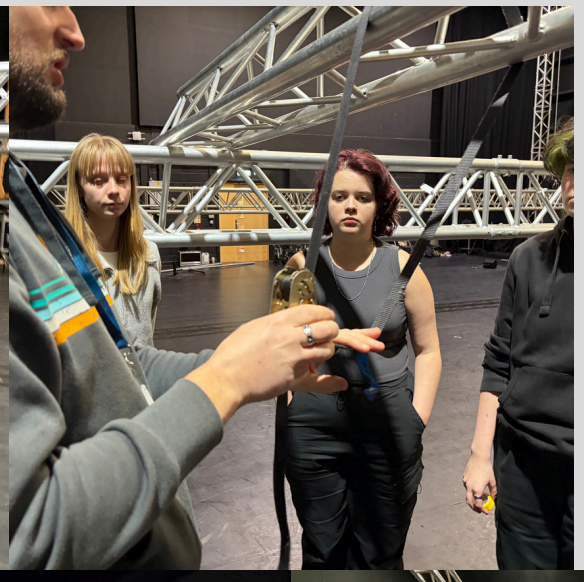




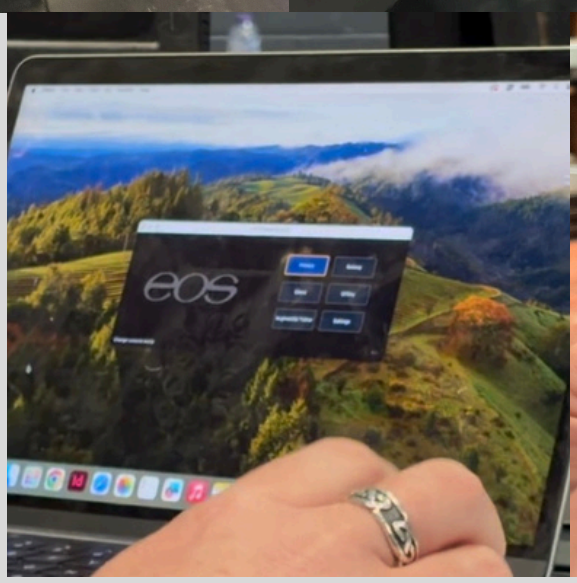


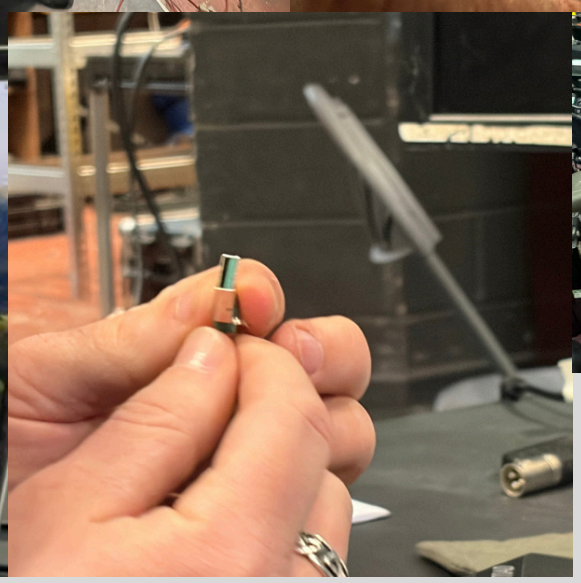
To de-rig everything our next step was to begin removing the lights themselves this was done by first disconnecting them from a power source, then tying their cables up so that the plugs weren't free hanging before shutting the lights barn doors next I removed the safety wire and removed the hook and placed the light on the floor, this method was repeated untill every light had been removed and then moved out of the way of the truss, the tape holding the power wires in place were then removed allowing us to unplug and coil up the many power cables that we used and return them into storage finally it was time to remove the extra truss which were attached using rachet straps in multiple places










Now that the lights, cables and truss had been removed the truss was raised back to a high level which allowed us to easily pack up remaining cables and other lighting equipment, further more as we were packing up we were also shown a number of other things including how we can open the lighting software on the mac and its license key before going on to see the light storage below the room we had previously been working

The main problem we had





After completing this module there is a particular challenge we faced that I would like to make a point of mentioning

this is the switch we faced half way through our independent project from using a professional sound board to using a mac book pro on which a similar software had been downloaded, although both used the same software with very similar formatting I found that it took longer for me to learn to use the mac book then the lighting board but I enjoyed both and was interested to ask questions about how certain locations and people do choose to use a mac book with the software downloaded over the more traditional lighting board.

This demonstrated a number of different things to me that I feel help to prepare me for the future:

1.That the most vital piece of kit can break
2.That this piece of kit can be so easily replaced

Reading list

rough out our course I have come to understand how essential team work is both during our time at University and afterwards within a professional working enviroment but as I now come to need one of the few books present in the iversity libary I realise fully how being able to work well with others is not limited those enviroments and also extends to access to resources, as if a person keeps a book of which there is only one copy for an extended amount of time this can limit the people they work alongside

Stage Lighting Explained

While we have moved on to a new module I have tried to keep at the centre of my work making improvements on my older work, as part of this I am happy to say that I am beginning my work surronding the essential reading list alot sooner then previously

“Pinpoint - Draw attention to a particular part of the stage brighter than another thereby drawing the audience’s attention to appropriate action”(Fraser, 2002,p. 23) as I read this book I have realised that I know at times more then I may realise as the definition used here can be used to describe lighting I have created myself as shown by the photo on the right I have previously used a light to draw attention to a chair and person in the centre of the stage therefore pinpointing



“Create spectacle - do any particular moments, or the piece as a whole, require special effects or highlighting that could be described as creating visual impact?”(Fraser, 2002,p. 23) While lighting my third and final cue I felt that the audience should feel that the characters focus has moved for a third and final time and unlike the third I wanted to draw this focus outside and



Gel Colour Filters

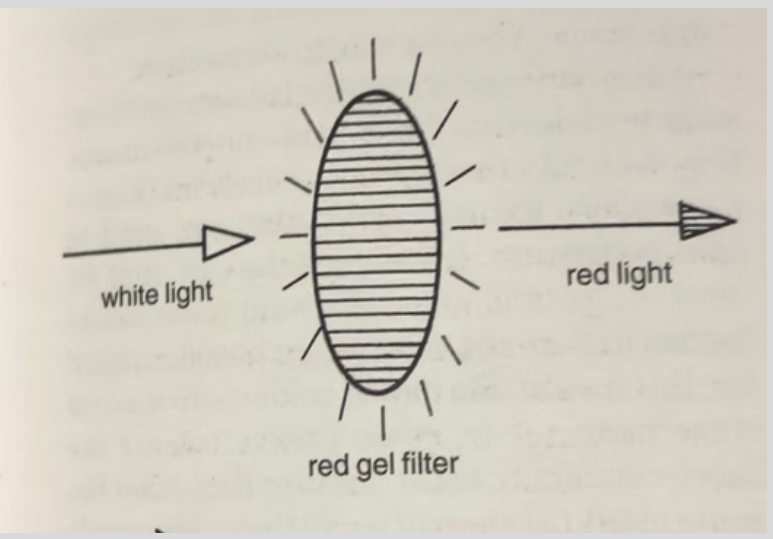
During the time we spent with our external practitioner we used a number of industry standard tools and technologies, but these are limited in a number of ways including what is actually necessary and the prices as a large number of the lights at our disposal utilised older halogen bulbs, this alongside my own interest in lighting has meant that I have found some smaller details within this book very interesting including the existence of multiple versions of gels which are what can be inserted into a variety of lights to affect change in the colour projected.

Gel Filters

Gel filters are typically made cheaply with an example of this being:

“The cheapest way is for the manufacturer to buy clear polyester film and to dye it on one or both surfaces. You can tell a film that is made this way because the colour can be removed by wiping the surface with a solvent or by scratching it. In most cases it will be a perfectly serviceable filter, but a problem will arise if you use it in colour scrollers. This is because during the manufacturing process the film is extruded thick and then stretched and rolled to produce the final thickness. This process puts a linear orientation into the film that causes it to shrink in width when heated. It will be prone to failure in colour scrollers.”(Flints.co.uk, 2023)

As shown above this cheap way to create gel’s although making them easier to afford can also render them unusable if simple mistakes are made furthermore it also means that they will not survive long term use as long term exposure to heat will cause them to shrink, while being scratched will create spots of light that are a different colour and the application of a solvent will stop them from being usuable all together



(Fraser, 2002,pp.67, illus)

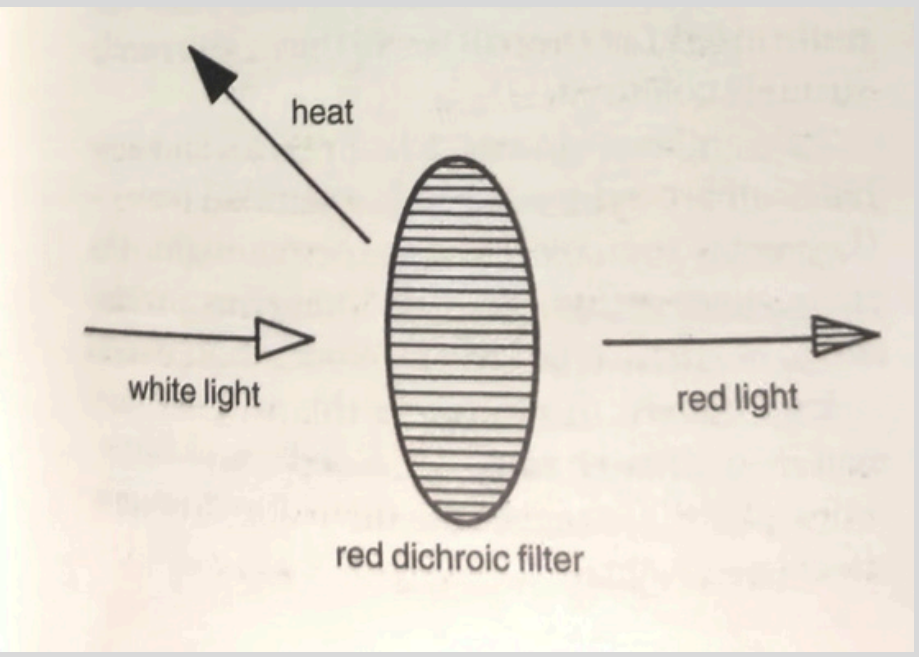
Furthermore as shown by the illustration on the left there is no mention of what happens to the heat from the light showing how it can end up heating the plastic its self therefore lead to it being damaged

Dichroic Filters

Dichroic Gel filters are not made cheaply with an example of this being:

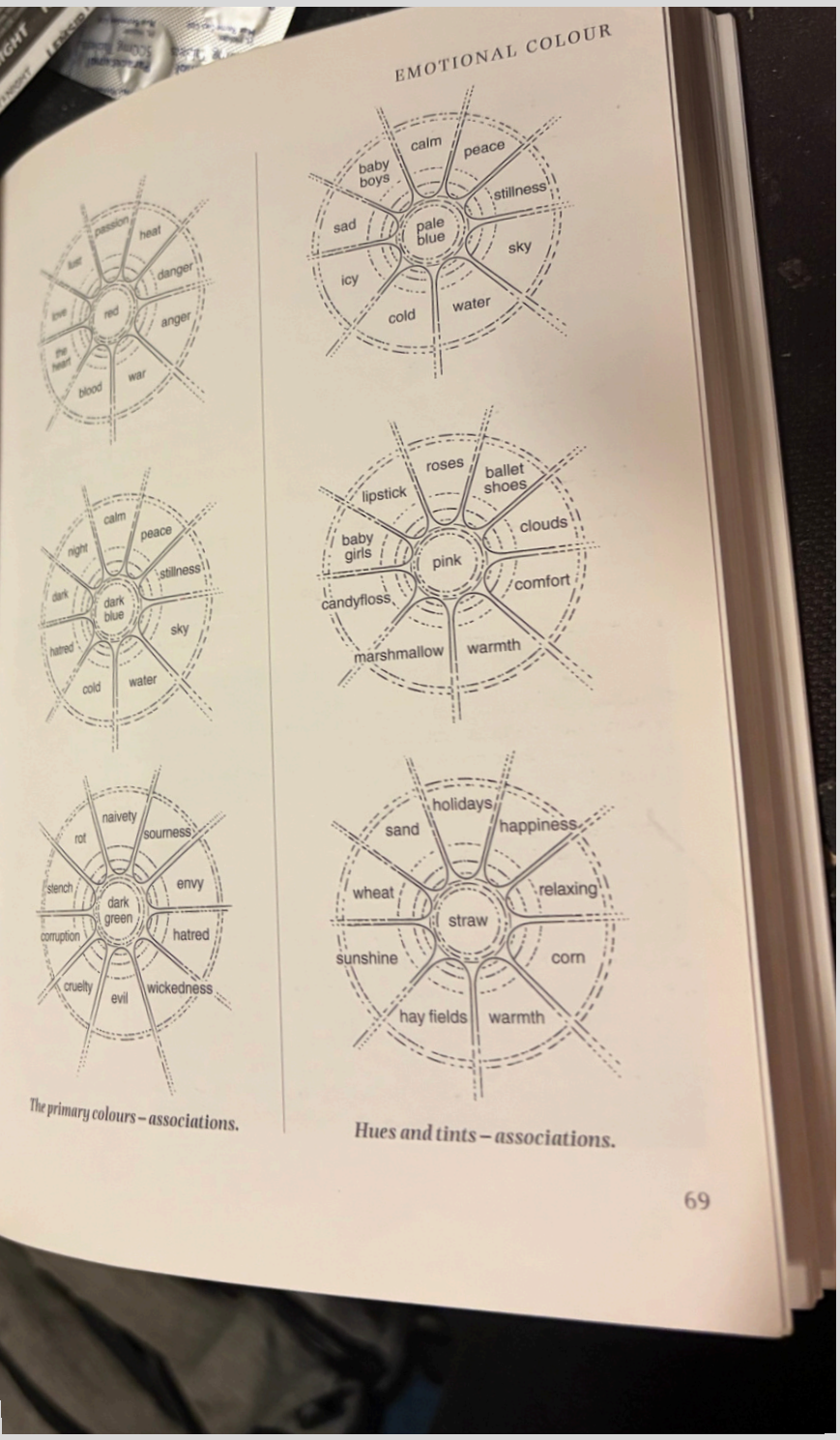
“Dichroics are made by stacking layers of glass and micro-layers of metals or oxides to create the color-shifting appearance that is so mesmerizing. The optical films used for ETC dichroics are deposited onto borosilicate float glass substrates, a product chosen because of its enhanced optical and physical properties”

Due to the materials its made from the heat rather then pass through the gel causing it to melt like many of the cheaper plastic gels is bounced back as shown by the diagram below this means that rather then the gel getting deformed and melting from the heat of the light instead the light itself could reach higher temperatures quicker and for longer which is somthing they are designed to do



(Fraser, 2002,pp.67, illus)

Colour association



(Fraser, 2002,pp.69, illus)

When we completed our lighting projects the associations surronding different colours and hue's was a large part of my work with an example of this being that I spent a large amount of time trying different gels in a halogen light as my LED lights were set to a white colour which gave the impression of a cold isolated room, as the light that illuminated my subject from the side was a halogen bulb it therefore gave off a amber tint that I found was too obvious, over time I tried multiple gels before settiling on a blue gel that colour corrected the light while still having a light blue tint to the light which only appeared on the side of the persons face, this shows how colour association is not always the same and that by using a mixture of white and blue light I was able to achieve my desired effect rather then soley with blue

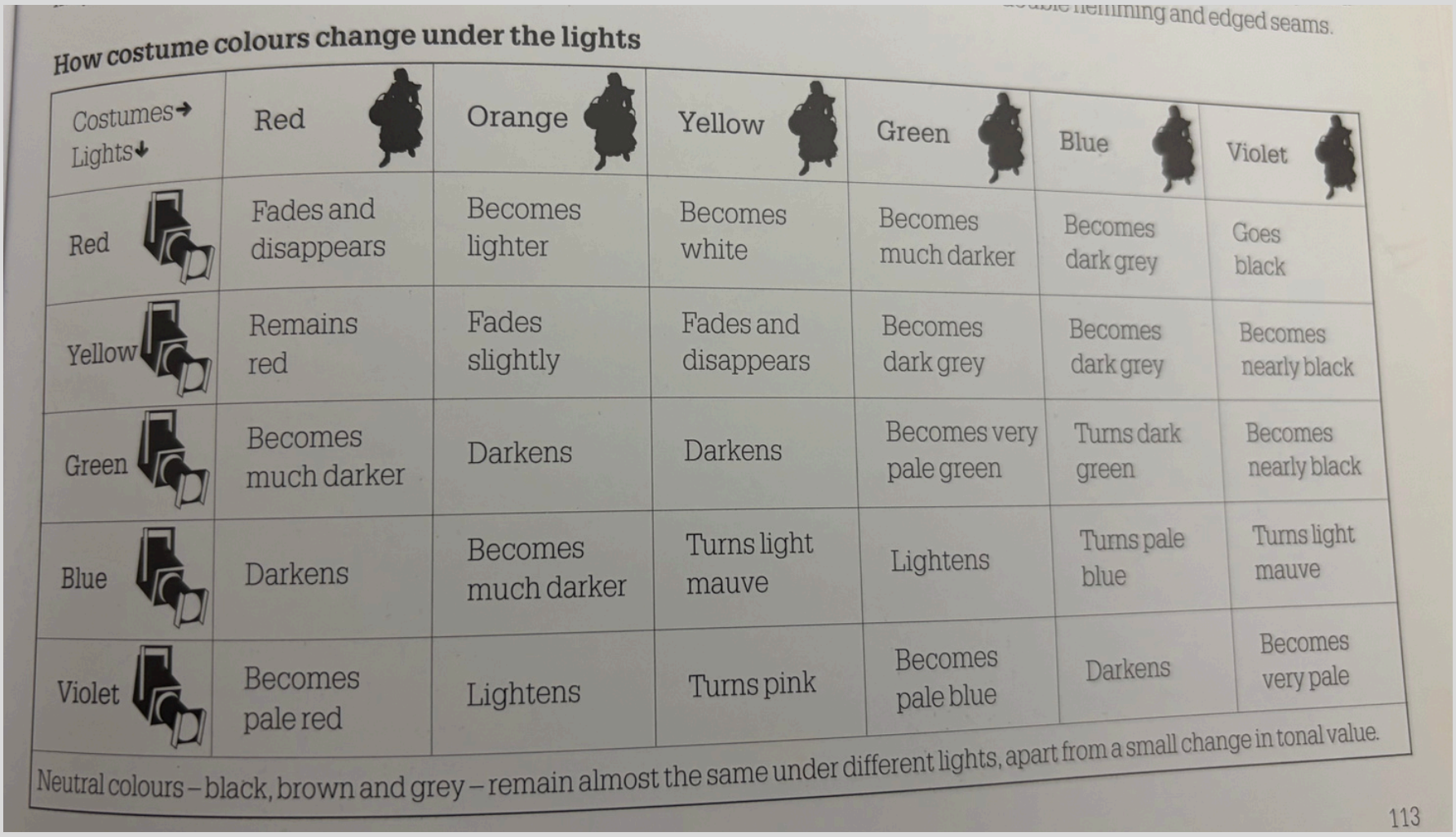
And so in this instance it is clear to me that the colour association Wheels actually had the potential to harm my efforts to find the correct light as they would suggest blue light whereas I used white in combination with blue and the reasons behind that were understood by my actor and audience furthermore while reading this section of the book I noticed mentions of colour associations todo with activities and events rather then focussing on an activity with these mainly surrounding the colour pink



Reading list

Create Your Own Stage Effects

(Fraser, 2002,pp.113,illus)



How costume colours change under the lights

Costumes → / Lights ↓	Red	Orange	Yellow	Green	Blue	Violet
Red	Fades and disappears	Becomes lighter	Becomes white	Becomes much darker	Becomes dark grey	Goes black
Yellow	Remains red	Fades slightly	Fades and disappears	Becomes dark grey	Becomes dark grey	Becomes nearly black
Green	Becomes much darker	Darkens	Darkens	Becomes very pale green	Turns dark green	Becomes nearly black
Blue	Darkens	Becomes much darker	Turns light mauve	Lightens	Turns pale blue	Turns light mauve
Violet	Becomes pale red	Lightens	Turns pink	Becomes pale blue	Darkens	Becomes very pale

Neutral colours – black, brown and grey – remain almost the same under different lights, apart from a small change in tonal value.

113

During our lighting module we didnt need to worry about how the clothing of our actors would be effected but that doesnt mean it is not worth knowing how it may be effected during future projects the table above (Gill Davies, 1999,pp. 113,illus) shows how clothing can be effected by a desigers choice of lighting and that it should be consdered.



(Fraser, 2002,pp.46,illus)

Gobo's are often small metal plates that have been cut so that when light is shined through the shape appears on the surface the light its pointed at, and they can be very good at informing an audience about a location without the costs and work associated with a built set

the multiple types of gobo's include what I have already covered. As well as: Multi coloured gobo images are created by having multiple gobo's with different shapes cut out and lit with different coloured gels so that when lit in the same place make up a composite image then there is glass discs which work by having a moving image simulated with painted glass discs set in front of a projector and work well when creating clouds, snow, water, rain, smoke and fire.

Then there are chasing gobo images which I find particularly interesting as they work simmilar to animated flipbooks and utalise the flashing of multiple laterns in sequence to create the chasing effect

Sound & Projection



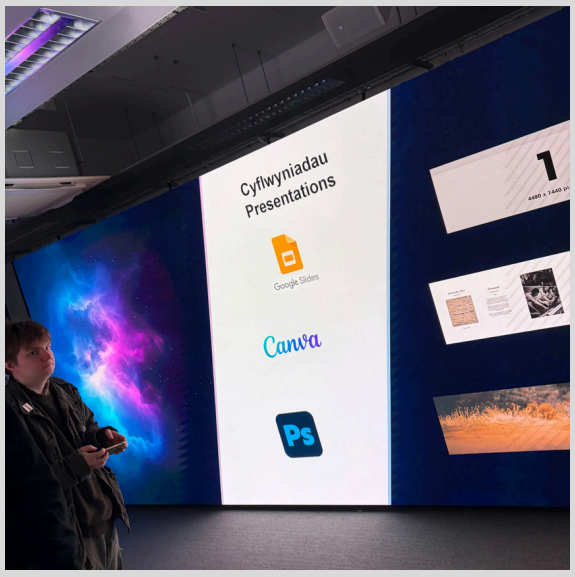


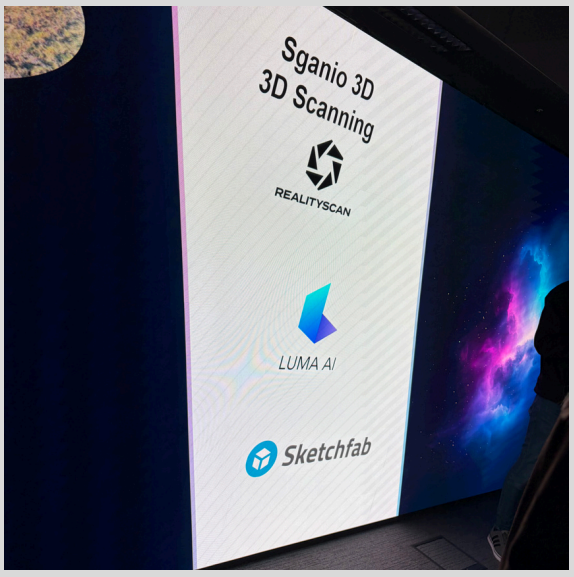
At University of Wales Trinity St David we have two immersive rooms one at Swansea and one in Camarthern we visited the one in camarthern and were able to see that it is a bookable room by emailing the department and that it is a universally usuable room with the computer run screens being accessible by any department within the university aswell as by students who may want to use them for recreational reasons



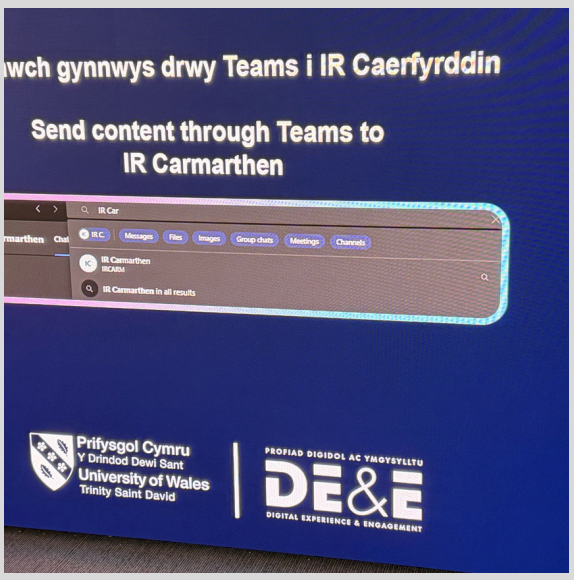
The room is composed of three screens that form a rectangular shape with other noticable features including the 4k Surrond sound with the speakers being located around the ceiling above the screens

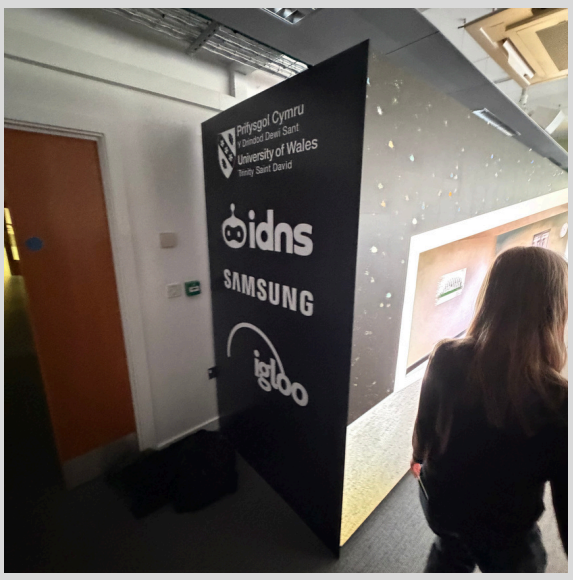




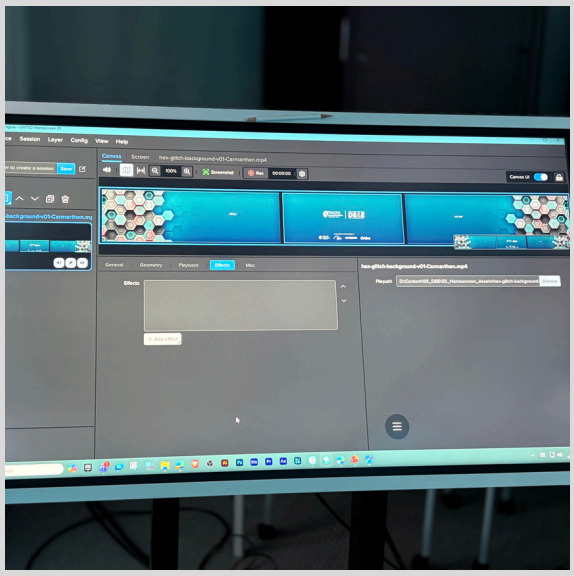


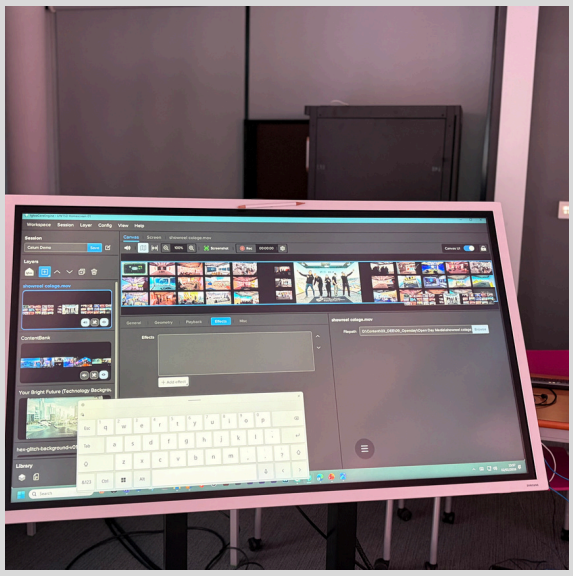
The three screens are split into pixel measurements with the first being 4480 x pixels, the second being 3200 x 1440 pixels and the third and final is 4480 x 1440 pixels this shows how two out of the three walls are the same size and that in total 12160 x 1440 pixels. Further more a number of different softwares are acceptted by the software used for the screens including the presentation softwares Google slides, Canva and Photoshop as well as 3D scanning softwares such as Reality Scan,Luma Ai and Sketchfab.





We were also given information regarding how we could also contact the team that maintains this room through teams and that the company's involved in constructing it were IDNs (Which supply audio and visual equipment), Samsung (who made the screens used) and igloo (who’s software is used on the screens)







Shown above is the main screen used to control the 3 walls, it allows a number of adjustments to be made including what is on the screens, the aspect ratio, scale and position





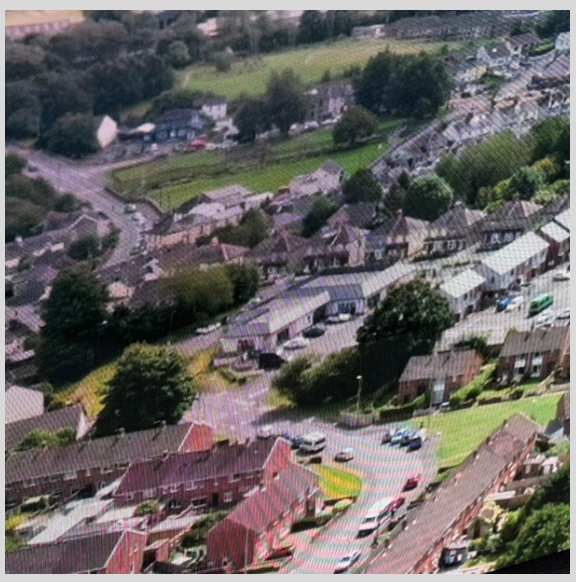


The capabilities of the screen are shown in these photos, the first depicts not only the wall of a room but also the outdoors then the second displays how images can be layered ontop of each other within the room and finally the third shows how distortion can be used within the room with this particular design being used to aid in camera angles





Shown above is another example of how the room can be used for camera angles aswell as backgrounds with the one shown above wrapping around all three screens

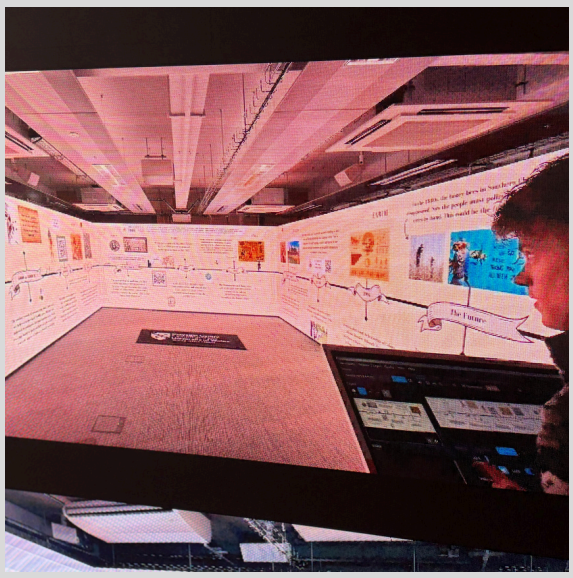


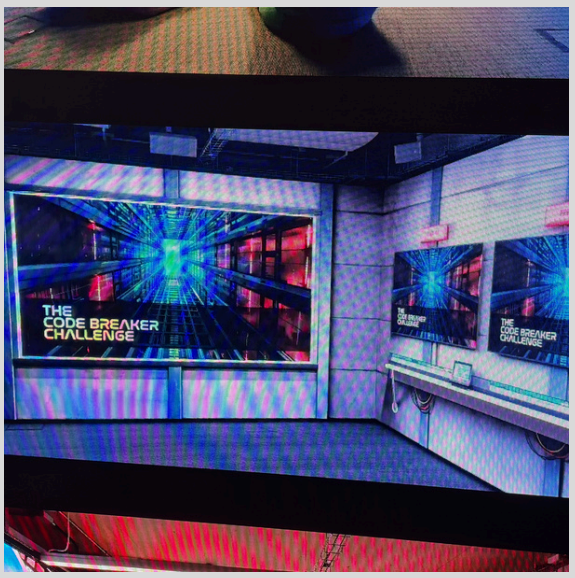




Once again this photo wraps around multiple screens but rather then being a background It is a 360 degree photo that has been taken on a drone displaying how these screens can be used for photography purposes







Finally shown above are some other uses these screens including being able to educate students on a physical site without visiting it as shown in the first photo, the screens being used to educate people through text and photos and finally them being used in conjuction with the control screen to operate as a escape room



After learning about these screens I was intererested to how they have been used in other situations such as during events which I then realised I had seen them during my attendance to Cruft's an international event focused on canine excellence in over 200 hundred breeds that often has 150 thousand visitors across its four days with it being used here to show the live camera feed to those in the arena in person.



Another way in which I have noticed these be used at Crufts is for advertisements with them giving companies the ability to pay for time slots meaning that multiple companies can advertise on the same space this can not only make these advertising spaces more affordable but also allow companies to have higher profits

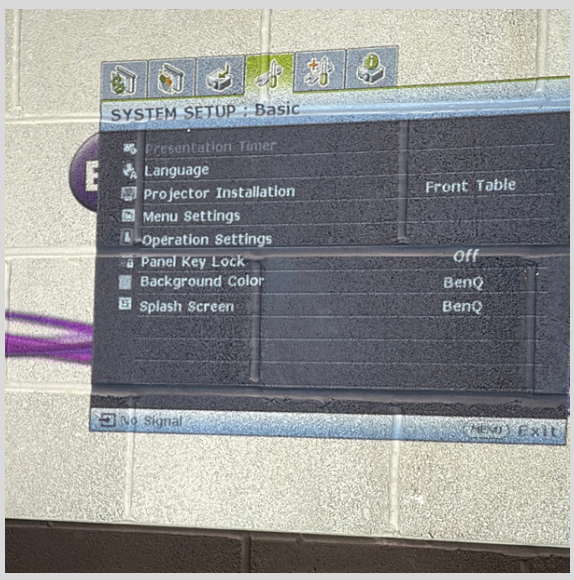
These screens can have issues with one of the most noticeable ones up close being dead pixels which are pixels that permentaly display one of the LED's original colours untill repaired, furthermore it is largely unnoticeable, except on screens such as the one UWTSD where you are able to get up close to the LED's themselves.



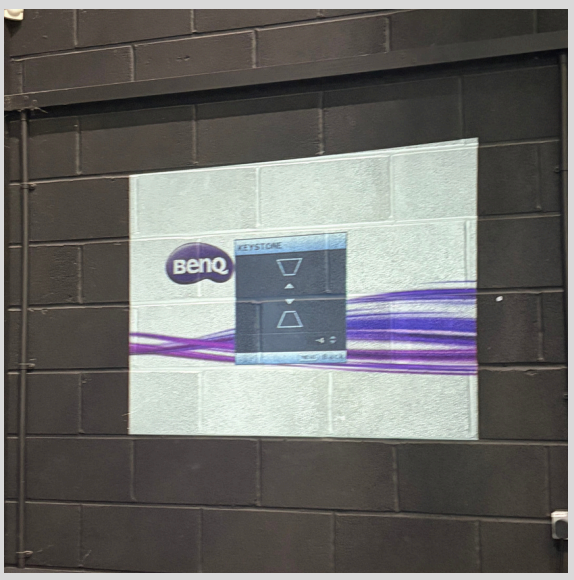




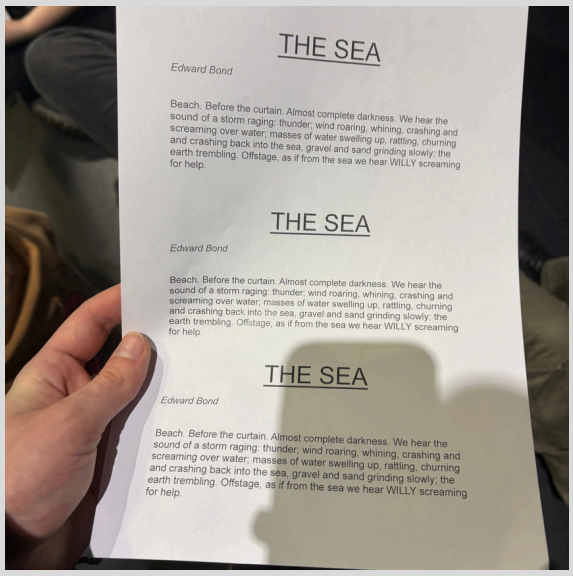
Next we looked at projectors and were shown a smaller, cheaper version for this demostration, a key part of this demonstration was how a Projector can be rigged and that the rigs and generally sperate rather then a part of it like on lights

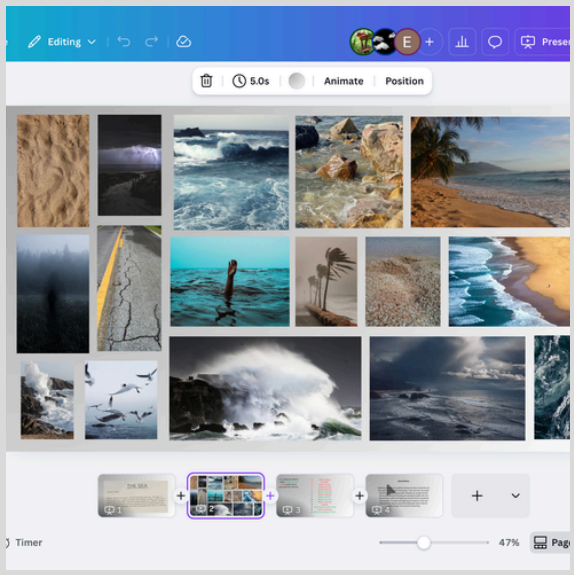


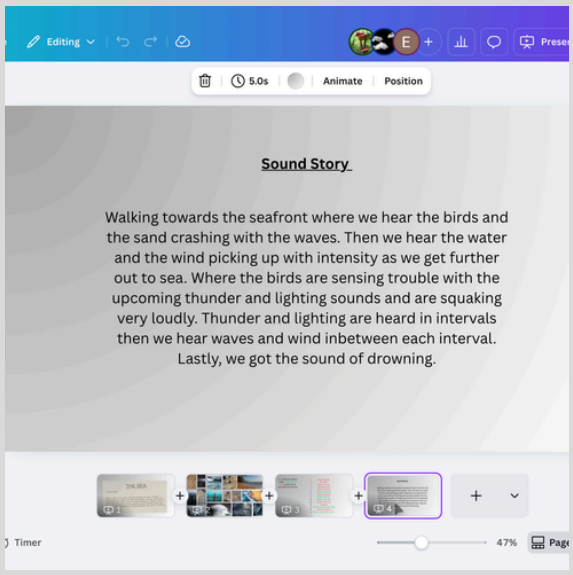


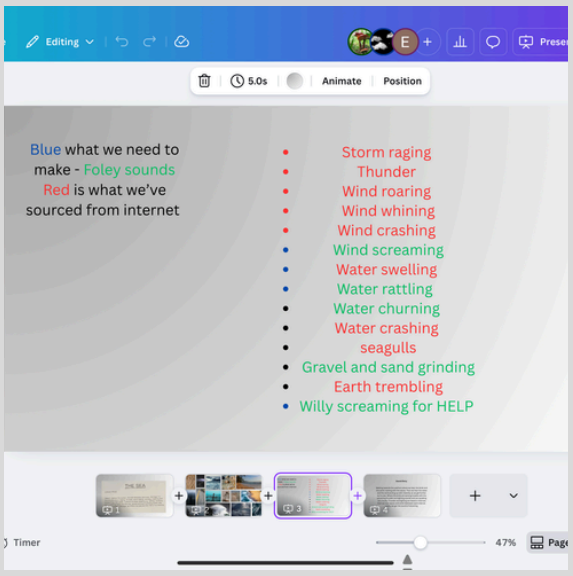


We then shown the different settings a projector has and how these can be altered for a number of uses showing how projecters can be flexible in their uses

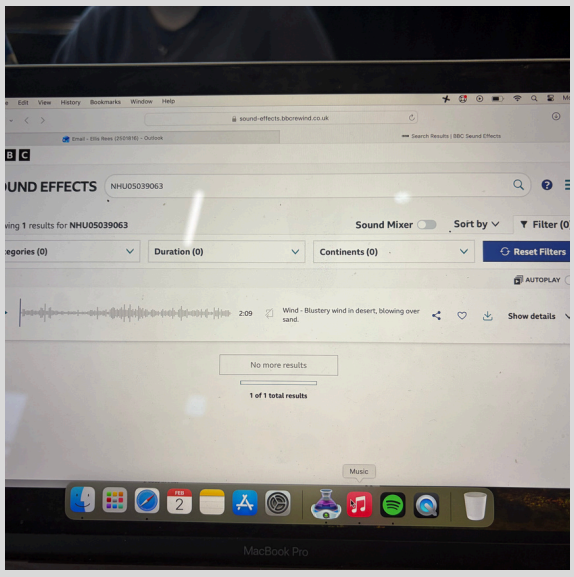








Next we utilised our sound and projection skills as we were presented with the script The Sea we began by creating a moodboard based of the script with this including photos of the sea, beachs and the effects of storms on the sea, after this we created a summary of the story and a list of the sounds that could be created with foley and those we could source elsewhere, as we sourced our sounds this list was altered as we found that were alot easier to source online and that other sounds could be created by foley







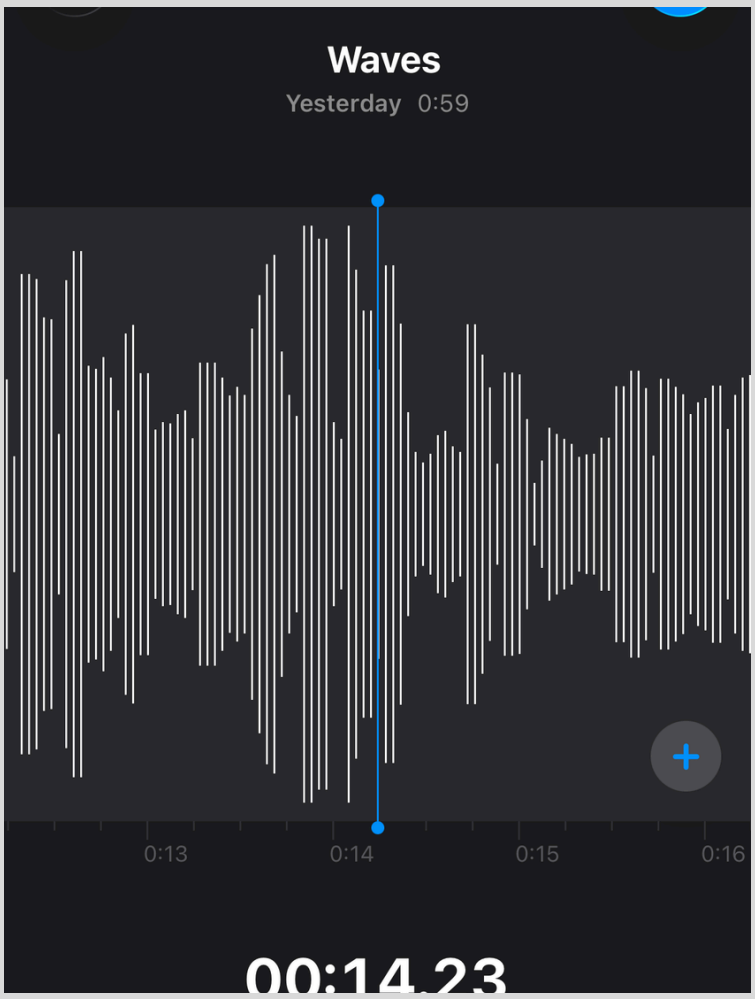
To source our foley and none foley sounds we found a number of different sources when it came to our none foley sounds a good source we found was BBC sounds as we found the sound clips were a good length as well as recorded to a high standard, whereas to record our foley sounds we used our phones with the most of the recording being done on my phone as it has the best microphone out of the phones we had at our disposal, to create our foley sounds some were easy to find such as the pin board we discovered in the prop cupboard which we used for the sound of waves on the sand and some were harder to get, with the best example of this being the wind noises for which we traveled to an open road surrounded by fields and raised my phone to over six feet high this meant that it was in the clear path of the wind as shown in the bottom left photo





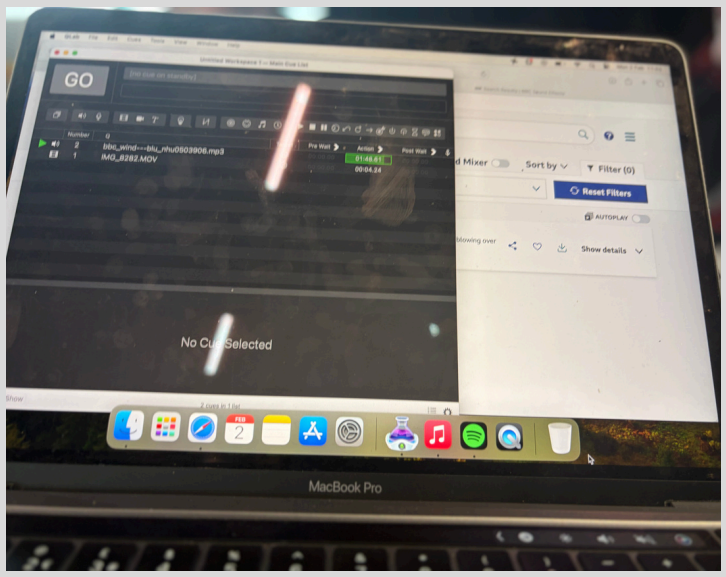


We also tried to create the sound of wind by blowing air at the microphone, but this didnt work and we found that the recorded sound from outside worked significantly better finally we also recorded a stream but upon testing this sound later on we found it to be too high pitched and

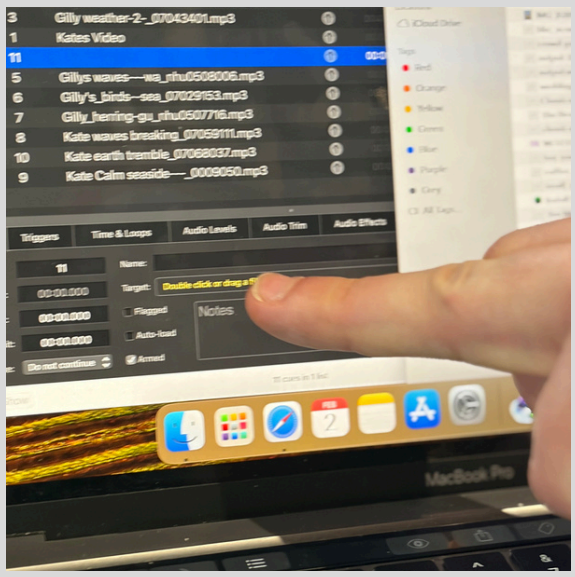




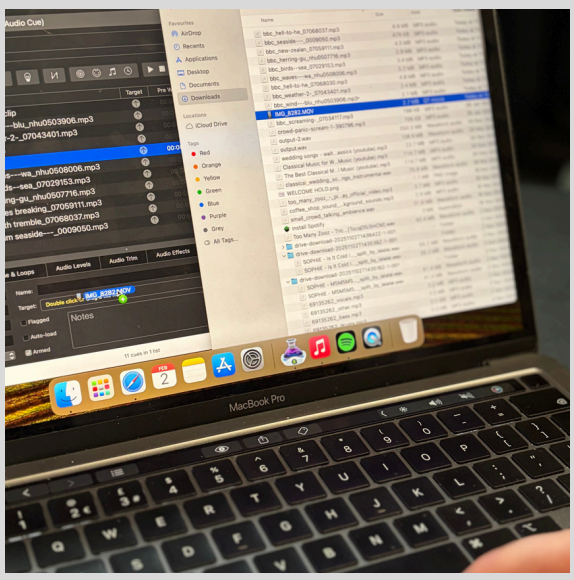
To record the sounds we needed we used the apple iphone voice memo app as this allowed us to only down load audio, which we could then edit after the fact as neccessairy

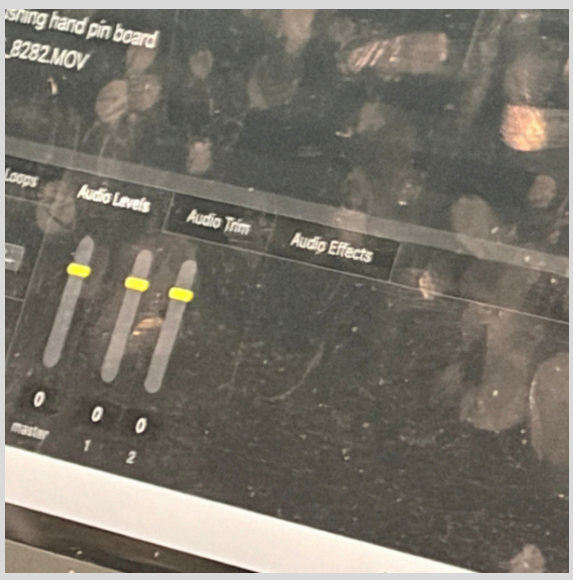


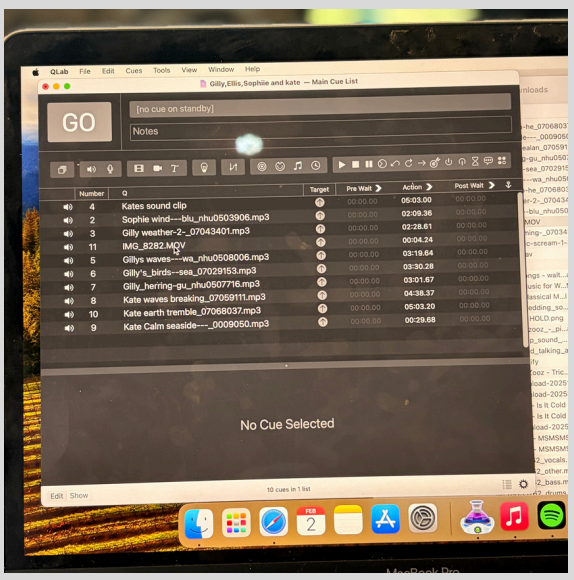




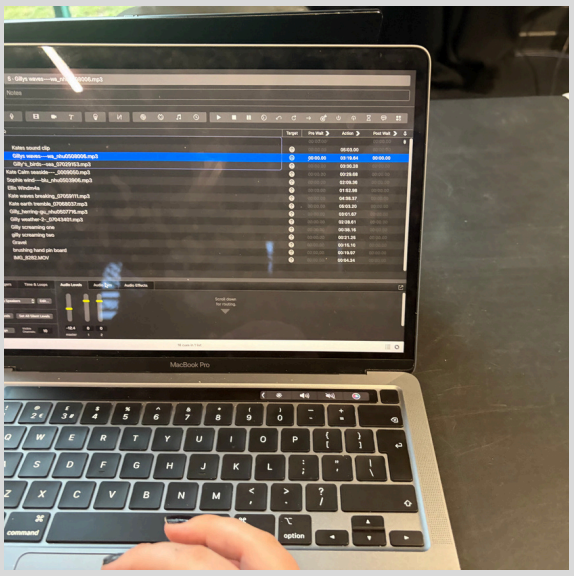
While inserting sounds we also inserted videos we had previously taken so that we could use the sound in them but we initially struggled with this as we struggled to then remove the video so that we only had the audio, after pressing multiple buttons and seeing what happened we quickly realised that we couldn't solve this issue so we spoke to former industry professional Meilir who now works as a technician at University of Wales Trinity St David and he was able to show us that we needed to drag the video final to a particular input so that we only got the audio final

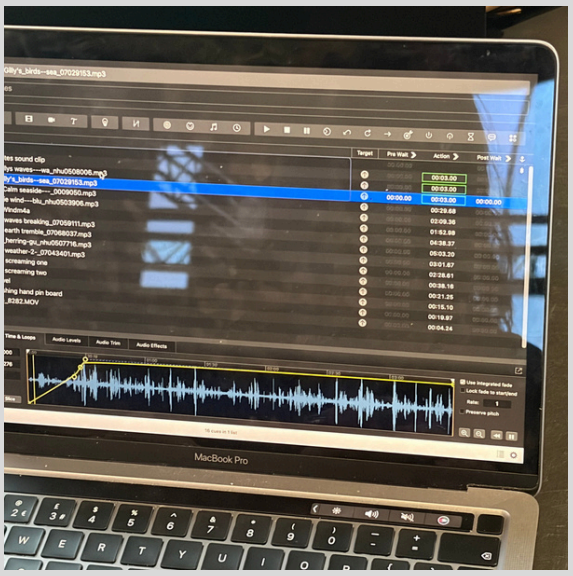






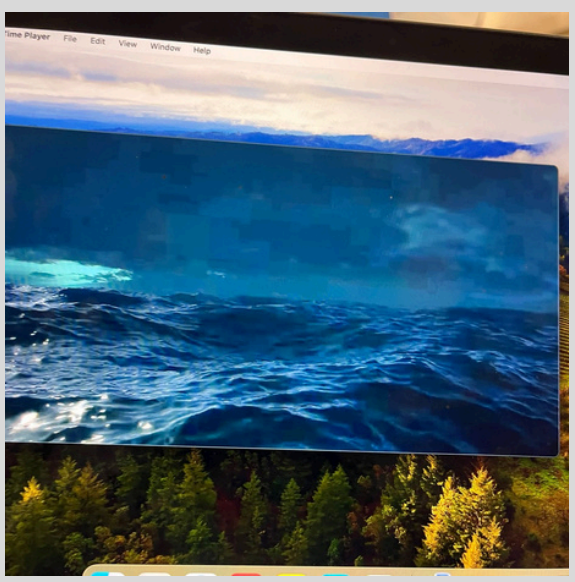
We then went on to add in a number of sounds and adujusted their audio levels, once we felt the sounds were ready we moved on to exploring Qlabs other abilitys including cue’ing photo’s

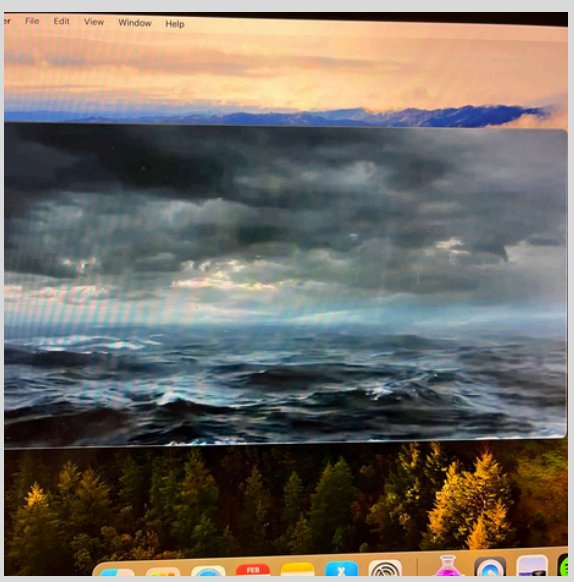




Photos were inserted into the cue list and as shown below these include 2D video animation, recordings of the tide and 3D animation

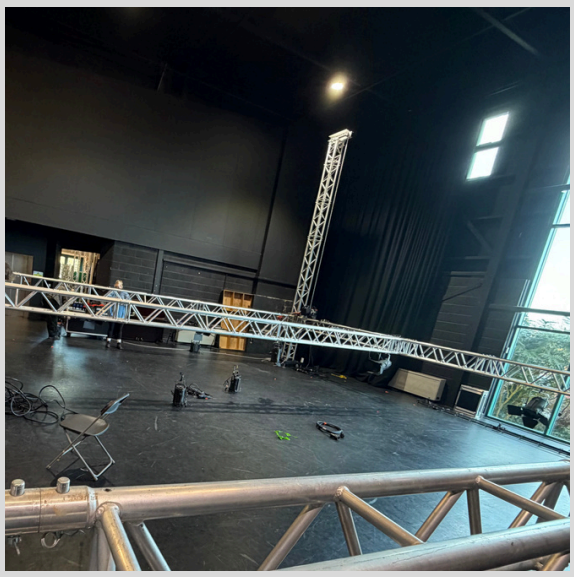


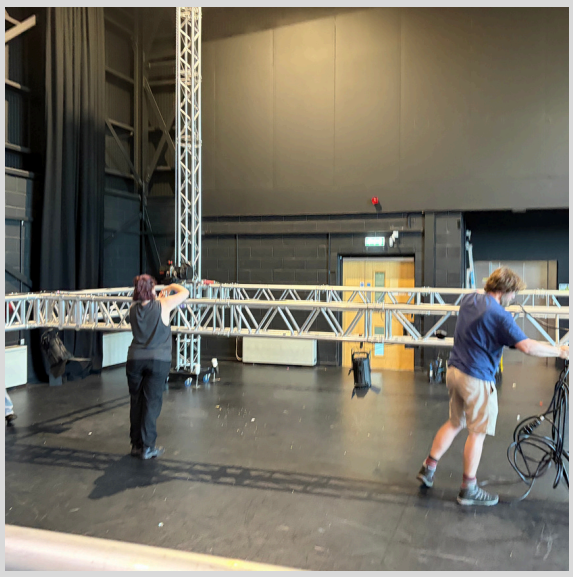




The 2d aimation was created to represent a calm tide then the second video showing the tide move in and out was meant to reflect and increase in tidal movement then the final video showing A 3d animation shows the final stages of the storm, our work was then shown to an audience of fellow students and

Skills Competition Wales











Towards the end of this module we found out that Skills Competition Wales would be using the performance spaces available at our university and that they had requested lighting and sound equipment to be set up ready, so that we could easily set this up for them we once again lowered the truss giving us easy access to lay through power cables that we could then attach lights to which were then connected to a new lighting board this not only demonstrated that I have paid attention in previous session but that have been able to complete these tasks and set up lighting for a proffesional event





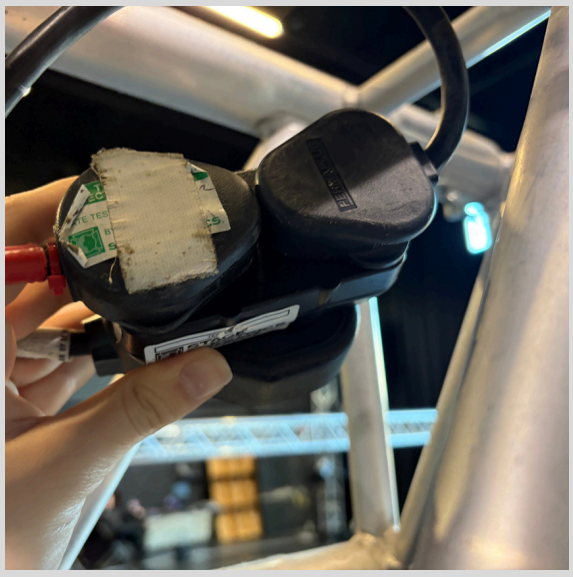
Shown above you can see we utilised Socaplex cables which went into an alpha box this allowed the many lights to be plugged in at the same time then as we tested lights we found that certain ones needed new bulbs to replace these we open the light up so that we could see the the blub and the reflector, the bulb was then removed, and a new one inserted into the light without the glass of the bulb being touched as if the bulb was touch with the oils present on the human hands then upon being activated the light could explode













As we tested lights we found that a number of our socaplex plugs were no longer working so in these cases we used Grelco’s as they allow two lights to be plugged into one socket

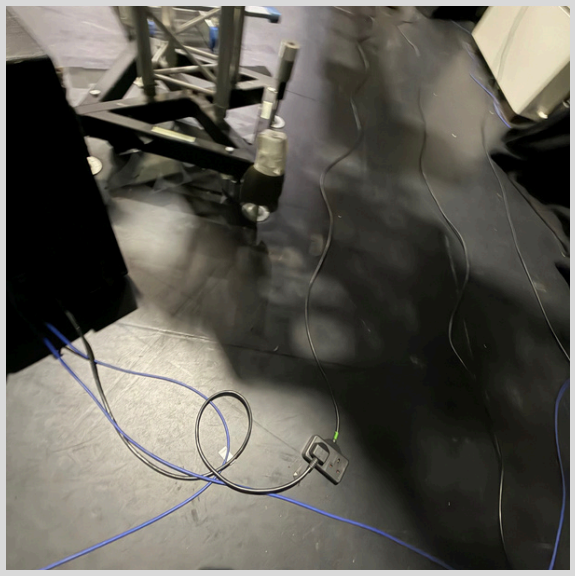




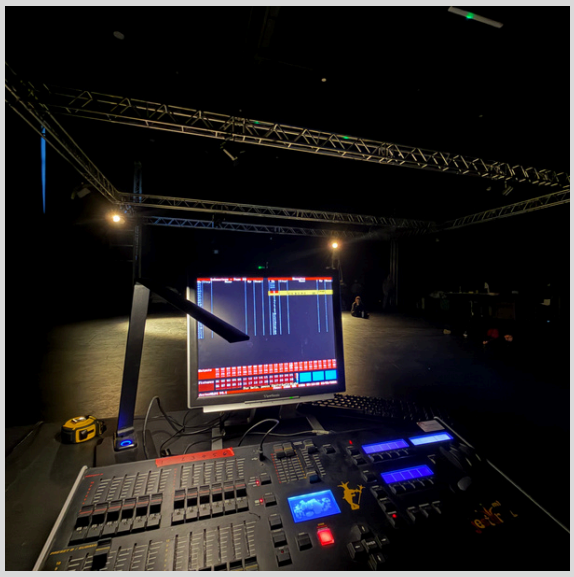


Next we marked out a 5 metre by 5 metre square in the centre of the room And then in each corner aswell, meaning that this is the area the performers will use and therefore we are able to prepare our lights to light the performance space





Once our lighting was set up we moved on to sound demonstrating my ability to set up a speaker aswell as connect XLR and power cables so that it can be used as part of the performances









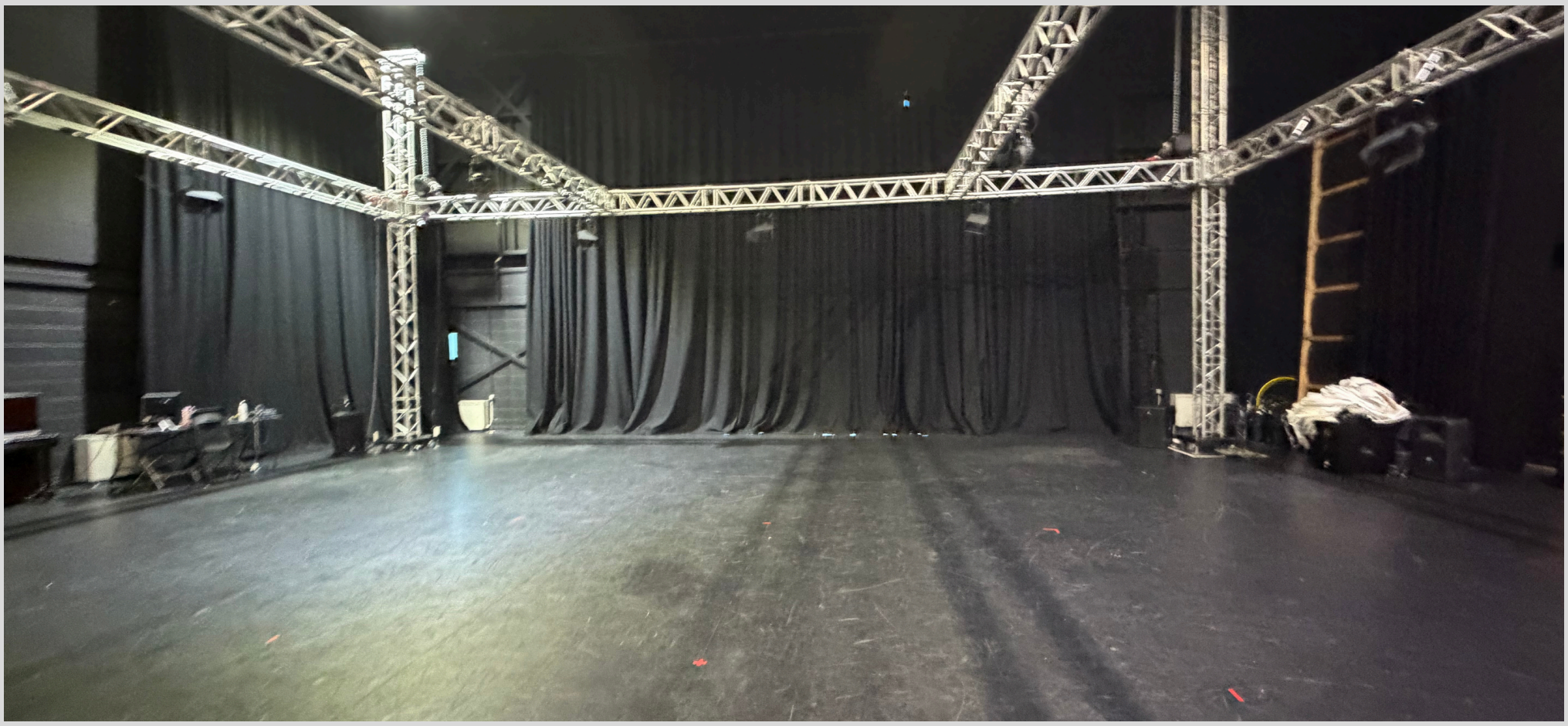


Now that the light and sound systems were set up it was time to angle the lights towards the performance space this means that when the performances are conducted there is an obvious performance and an obivious audience area,

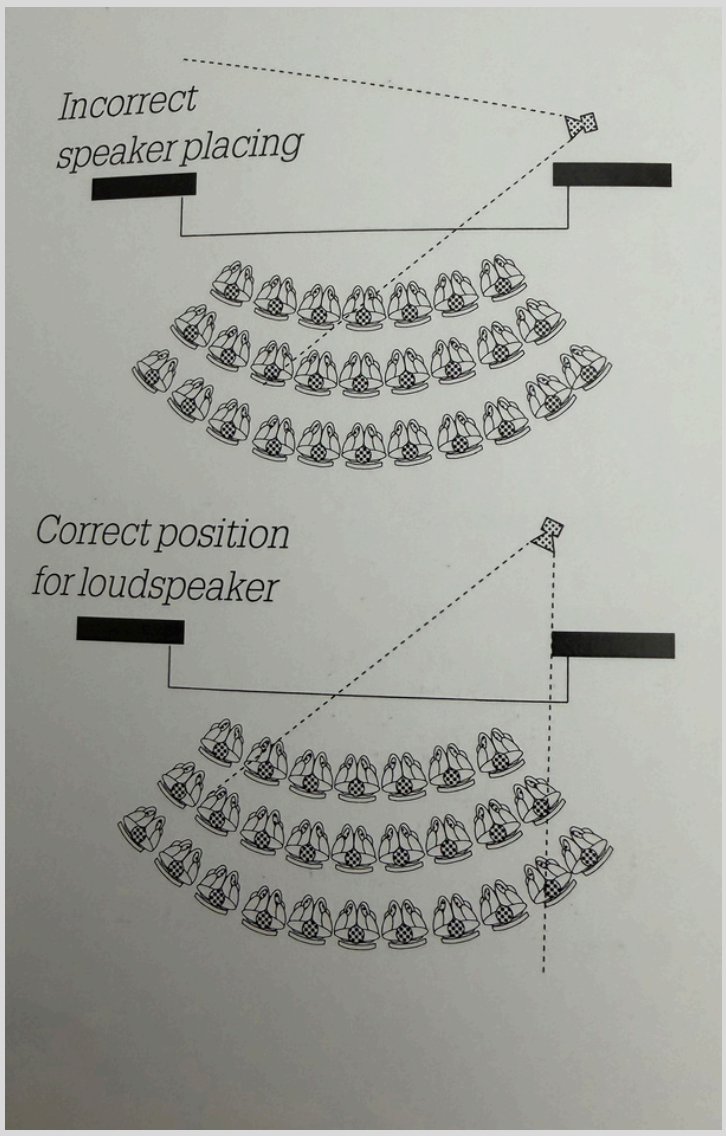
we did this by slowing increasing the intentsity of each light seperately from the rest and adjusting the distance of the bulb and reflector from the lense before going on close the barn doors so that the light only hits a particular area. As part of this I took the opportunity to



Once we had completed all these tasks we were nearly completed and all we now needed to do was close the curtains so that the light from outside was not visible

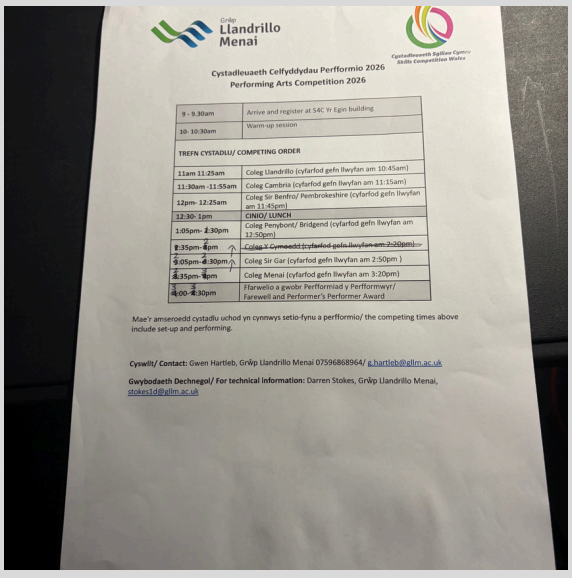


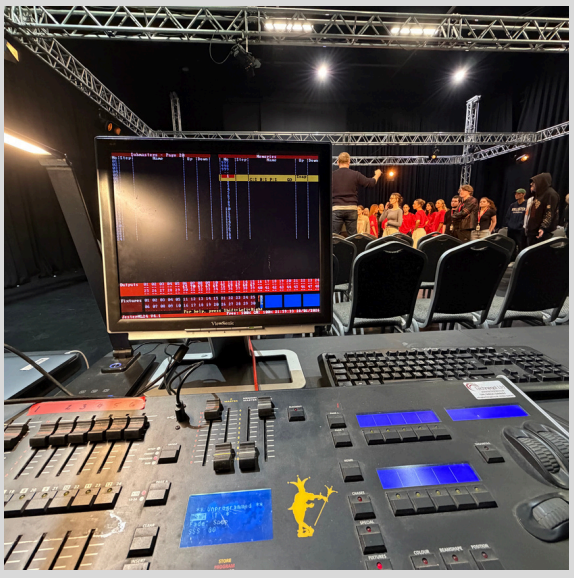
As shown here on one side of the space we placed a speaker in each corner this is exactly the same on the opposite side we did this as the audience will be in the round therefore this speaker placement shows that no matter where someone is sat the sound should be hearable by the audience



(Fraser, 2002,illus)

An example of how this works is shown to the left and displays that with sound speakers should be aimed in the direction of the audience






A few days after set up it was the live day for skills cymru wales I operated lighting amd sound at different times for the performance competition with many teams only wanting basic sound and lighting, and althought that initially seemed easy but I quickly discovered that many of the teams that had scripts didnt stick to them and instead skipped lines and ad-libbed their words which made it difficult to know how long it would be and when the cue's were actually needed, this displayed to me one of the ways in which although tech can be ready it still may need to adapt when performers are involved





Although it isnt documented here once all the performances were done we and the space was being used by the university again the next day we stacked all the chairs and placed them facing the wall by the wall this meant that they would not be an obstacle for classess and that the universitys estate's department can easily collect the chairs and return them to storage

Evaluation

During this module named Production Technology we learnt about three design disciplines these included: Sound, Lighting and Av

The first discipline we learnt more about was Sound Design and to start this discipline I worked well by showing interest in our sessions not just about specific items or technologies but by actively taking part in tasks that improved my knowledge while also taking part in group discussions and testing ideas that I had. this shows how I worked well and displayed skills that aid in future employment, but something I need to improve on is continuing this throughout my work as when we went on to discover foley and create our own sounds there were often times that I feel my concentration and focus struggled and looking back I feel that in the future I need to keep in mind the amount of time we can be focusing on a particular topic for, and make sure I take breaks when needed to avoid burnout as our initial time spent on foley is in my opinion not a time where I completed the best work I am capable of and is a situation and mindset moving forward that I would not like to repeat

During this module I particularly enjoyed the time spent on lighting and the opportunity to be taught by an industry professional I particularly enjoyed the time I spent operating the lighting board not only in a capacity as a designer but also as a board operator during not just other members of my groups presentations but also during Rox's (Dave Roxburgh's) educating of my class as it allowed me to gain extra practical experience of the lighting board which I felt allow me to be more relaxed while learning how it worked rather than rushing and stressing when it came to our lighting projects later on furthermore this time also served as extra time in which I could make mistakes which I found helpful. Rox's example to us was a script taken from the movie Shawshank redemption and specifically follows the character of Red during his parole hearing, this is something that he quickly lit at the time as an example for us and when it came to the scripts we choose I reused this script and displayed how I was able to create an original idea despite having seen the script lit before by not only experimenting with similar lights to Rox. But by also using new lights, colours, gels and gobo's finally I also utilised these skills in the professional setting of Skills Challenge Wales where I completed work in a professional environment this displayed how I was able to use the knowledge and skills I had previously gained and use them to create a professional environment.

later on in the module we did do more foley and during this time I took and interest in this work not only recording, creating foley sounds but also Qlab as it is an industry standard sound design software to cue sounds based off the stimuli "The Sea" for this we displayed how we were able to source sounds from a variety of sources including websites such as BBC sound which publish high quality audio as well as sourcing them via foley as can be needed when producing not only Tv but also film and theatre productions during this we also displayed the ability to use Qlab in others ways that are industry standard by cueing photos and videos alongside the sound this is displays not only how we have the ability to work within the industry but also our ability to solve problems as at times we struggled to input certain file types as well as their cues.

In conclusion I feel that I have worked well during this module not only during contact time but also during my own free time during which I have improved my use of time to complete my work quicker and to a higher standard then I feel my previous work has been completed which I feel is reflected through my own personal exploration during this module that was not as prevalent in my previous work

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