

# **Really Local Catford Specification and Interfaces Projection and sound**

**Working 11 May 2019  
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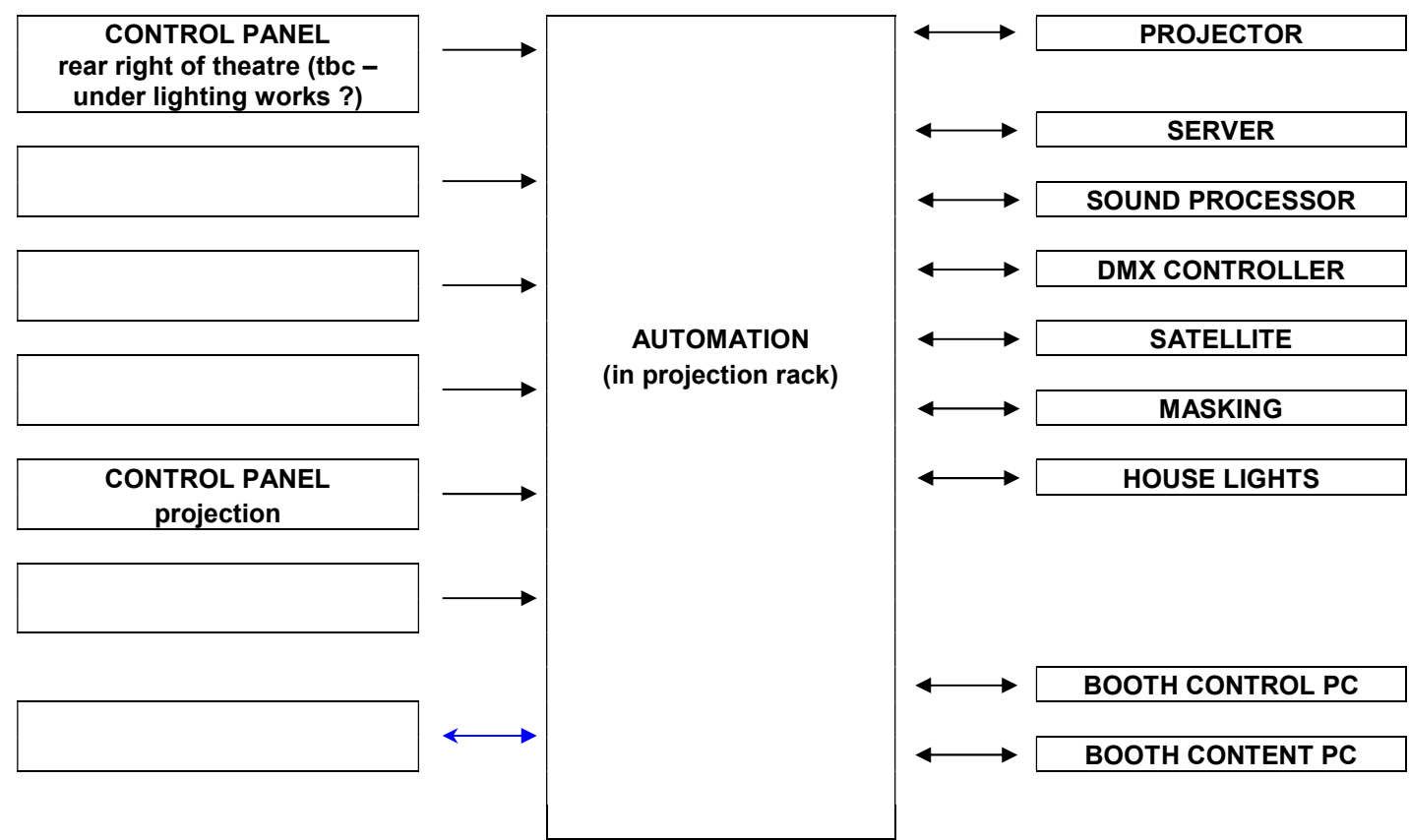
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Brief / Overall approach

Designation of works

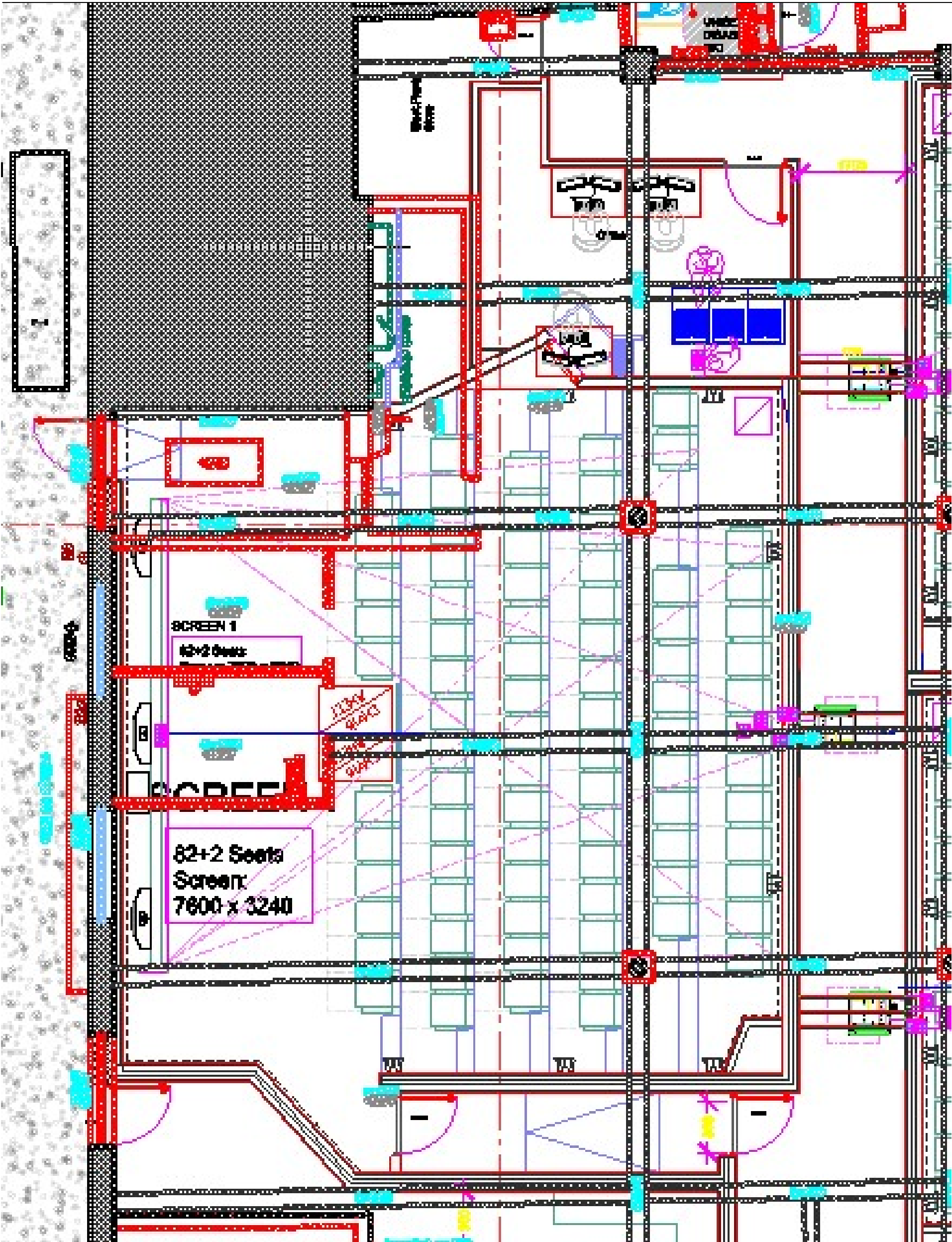
- First fix – main contract
- Cabling – main contract where access is apt
  - Local cabling – projection installer
- Speaker installation – projection
- Speaker cabling – main lx
- Screen and screen frame – projection
- Interfaces – main lx
- Lighting and interfaces – lights and interfaces by others
  - Fire alarm talks to both projection and lx
  - FP providing 3 sets of 5 normally open relay contacts

Block diagram

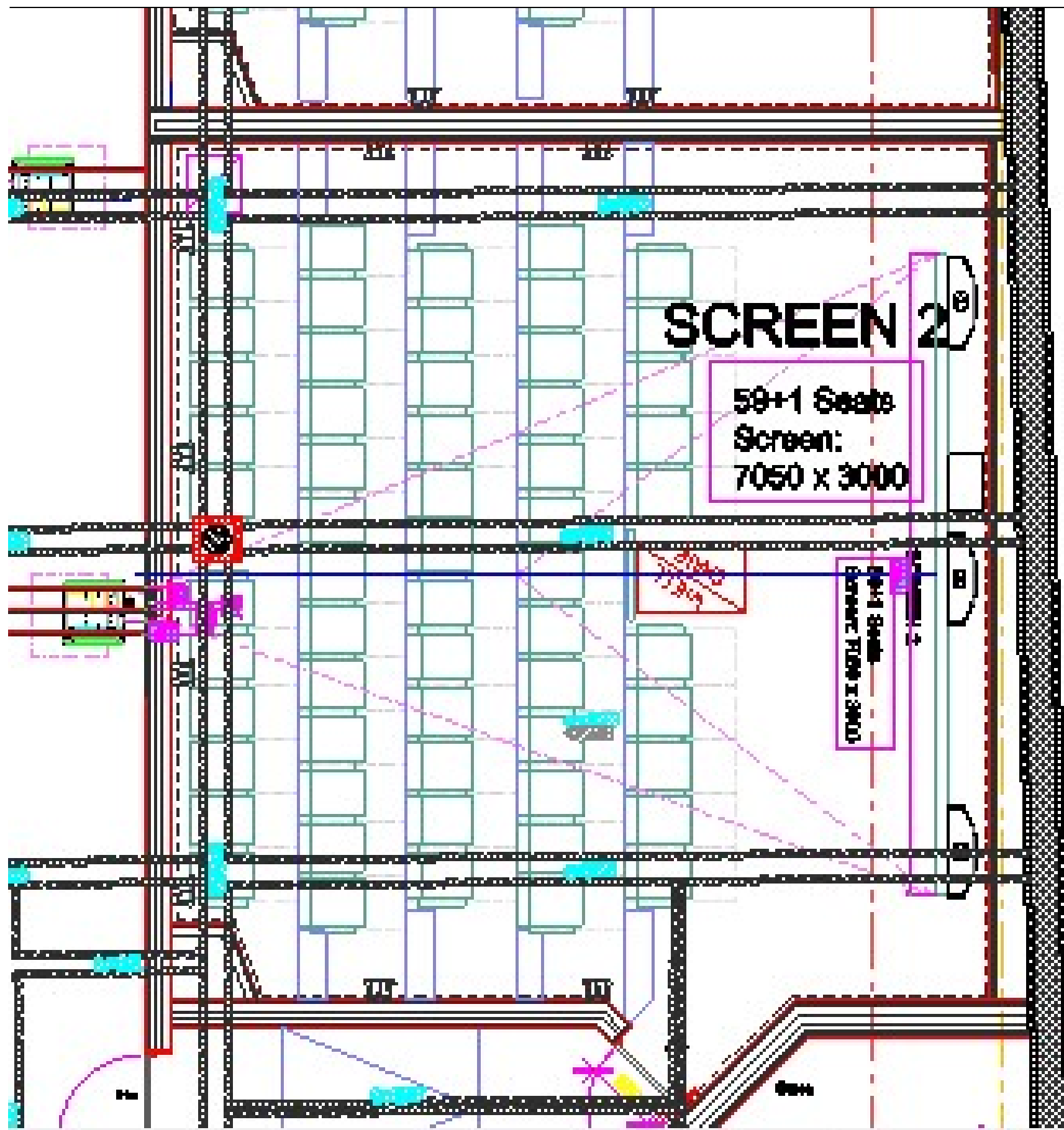


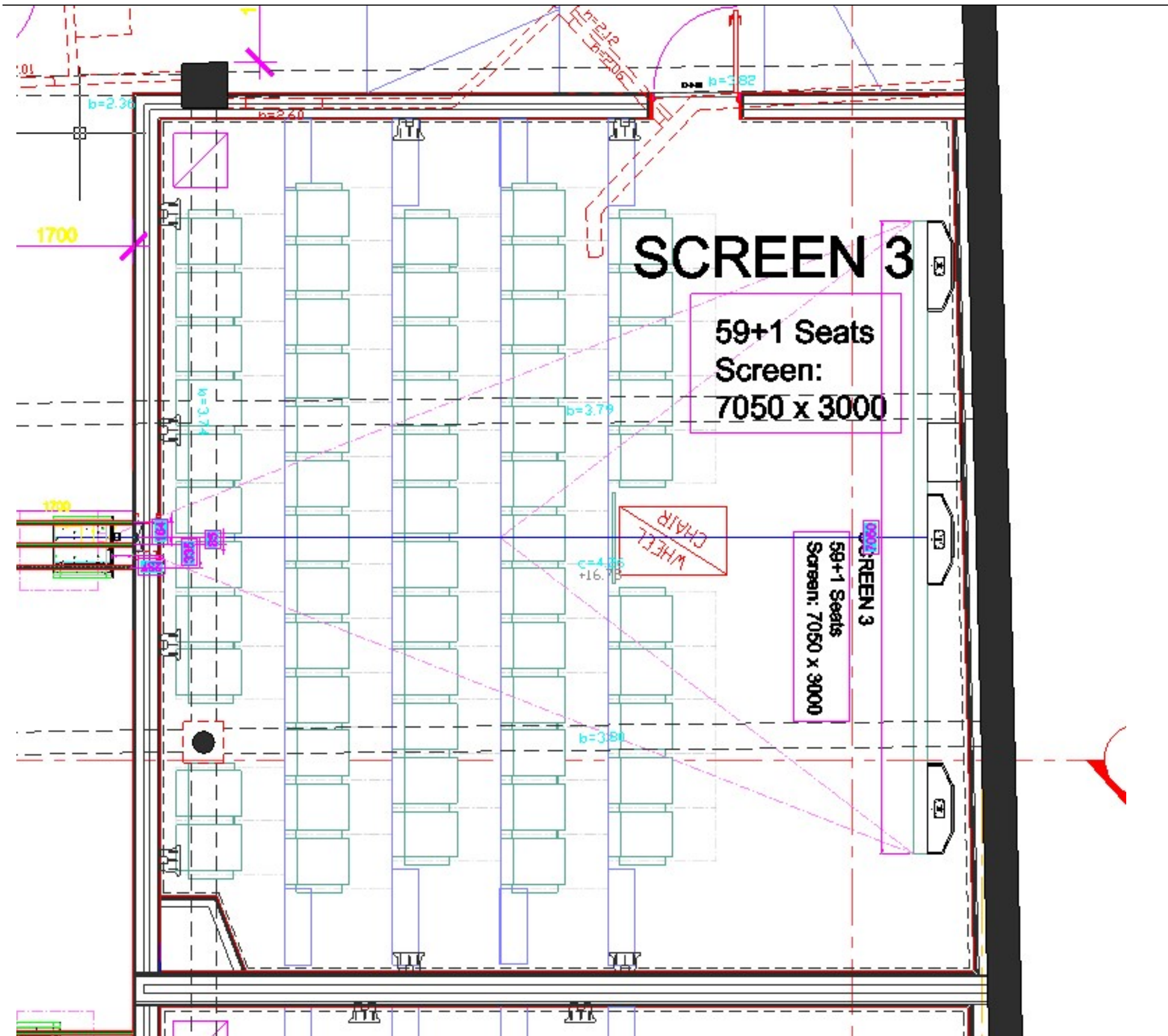
Layout











SCREEN 1

82+2 Seats  
Screen: 7600 x 3240

3240

3690

320

396

SSL+ 000

FFL+ 065

+ 365

+ 665

+ 965

+ 1265

+ 1565

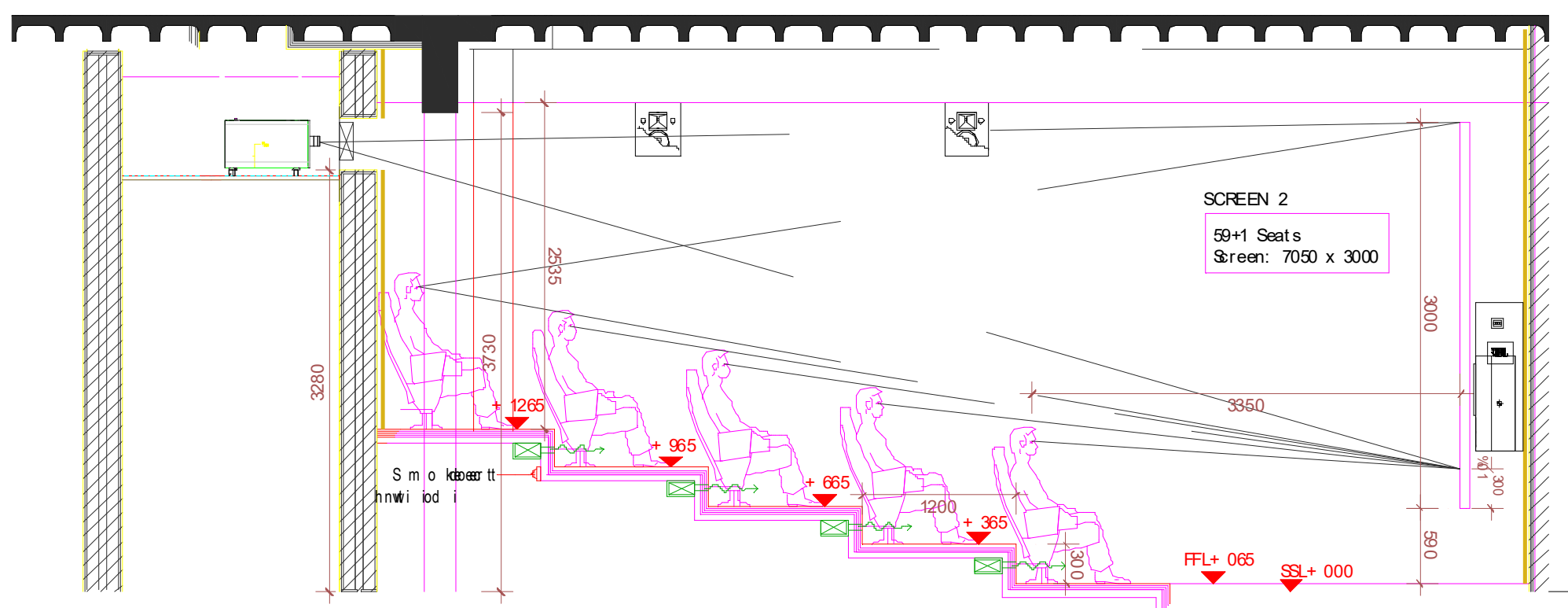
3280

2235

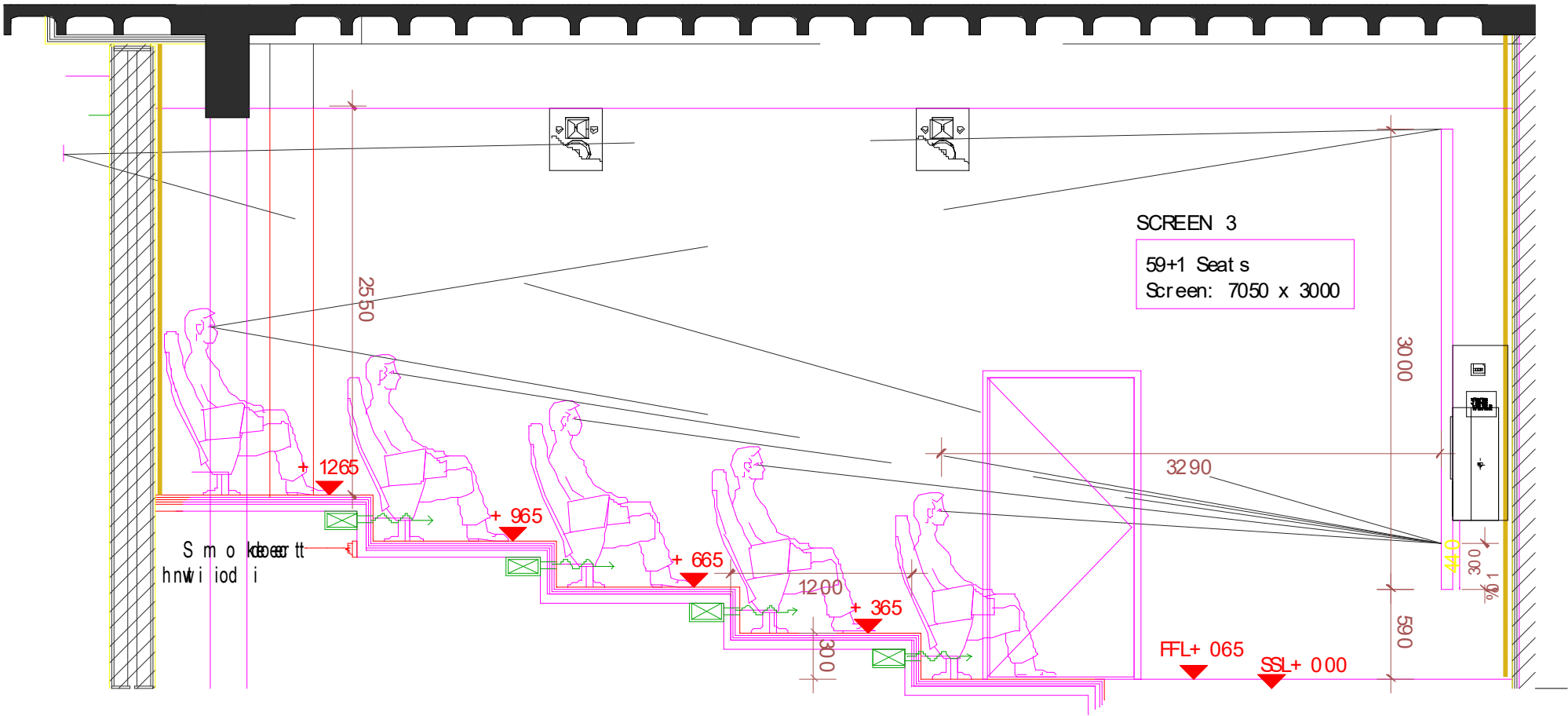
410

W n d o e i m i  
r a t t o k r o j m i  
P y r a s t e l

S m o k o b e r t t  
h n w i o d i









Programme

PROGRAMME

13-Apr	Design locked	
	Screen frames first	
22-May	fix	Needs walls up in theatres
	Surround bracket fit (best with no steps)	
29-May		
05-Jun		
12-Jun		
19-Jun	Delivery racks	Office needs to be serviced and secure
	Delivery speakers	Ideally mount - site secure ?
	Install HI VI	Cables
		Needs 240V and server room complete, clean,
26-Jun	First fix racks	secure
03-Jul	Delver and install projectors	
10-Jul	Continue fix	Needs network and all interfaces in and live
17-Jul	Second fix	
24-Jul	Screen install , initial training to key staff	
31-Jul	Set up - theatres ideally complete, must be clean and seating etc in	
06-Aug	Snagging and advanced training	
	Masking etc	
13-Aug	Dry runs by venue	
20-Aug	Open	

Screen

We will be installing a standard cinema screen and screen frame. This will be a box steel structure, and will incorporate platforms for the stage speakers as well as motorised moving side and top masking. Screen will be flat and masked, not curved

Specification

The screen shall be supplied and installed on a box or tubular steel frame. This should be supported by legs on the floor of the theatre, with minimal connections to the behind screen wall due to it’s lack of load capacity. Screen should be matt white micro perforated with moving side and scissor vertical masking

The screen surface should be Matt white in colour and should be microperforated to allow sound penetration. Platforms should be incorporated to accommodate the speakers as drawn (note each speaker could weigh approx 40kg – platforms should be 900w x 600d x approx 25mm).

The area behind the screen needs acoustic treatment - see below

The screen, masking and any ancillaries should comply with BS5867:1980 Ignition source 0.

Image sizes

Screen	xx	CAtford1	CAtford2	CAtford3
Throw to wall	#	11049	9380	9383
Speakers and screen	#	400	400	400
Throw to screen - straight	#	11049	9298	9383
Throw to screen - centre	#	11049	9298	9383
Throw working	#	11049	9298	9383
Height available	#	3735	3735	3735
Top masking	#	100	100	100
Min BPL	#	364	590	590
Height possible working	#	3271	3045	3045
Width possible	#	9400	9380	9450
Side masking (per side min)	#	300	300	300
Wide possible working	#	8800	8780	8850
Native ratio possible	2	2.690309	2.883415	2.906404
Suggest top masking		7.6x3.24	7.05 x 3	7.05 x 3

Roles and responsibilities

AV contractor -

- Screen, structure, install
- Speaker installation on screen frame
- Booth controller

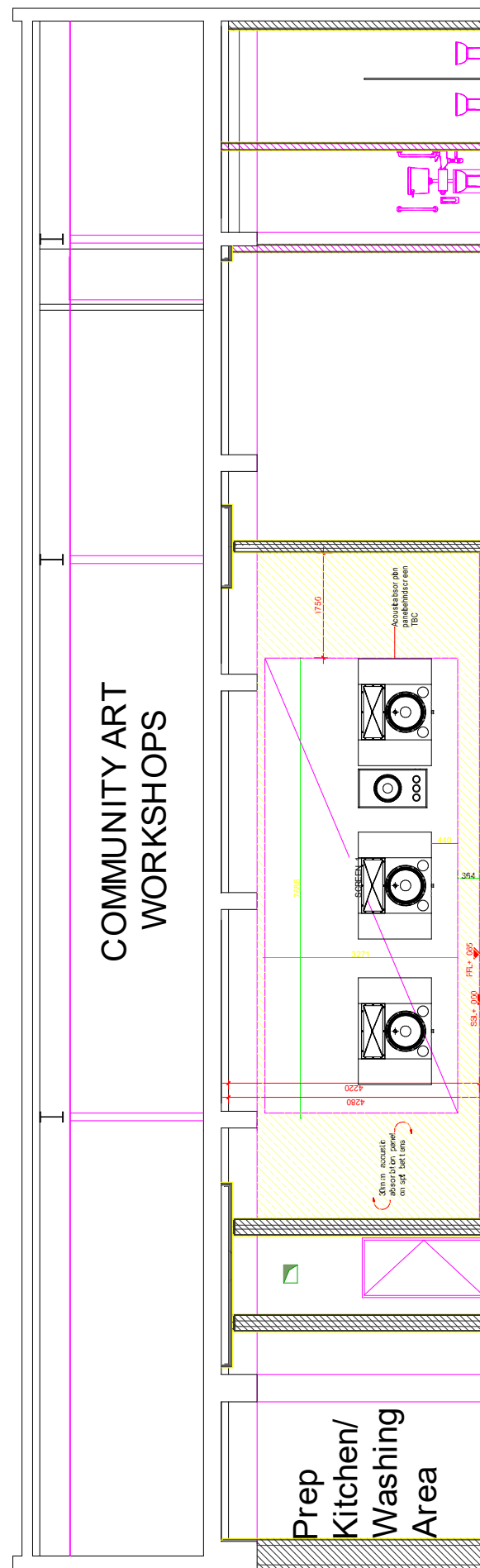
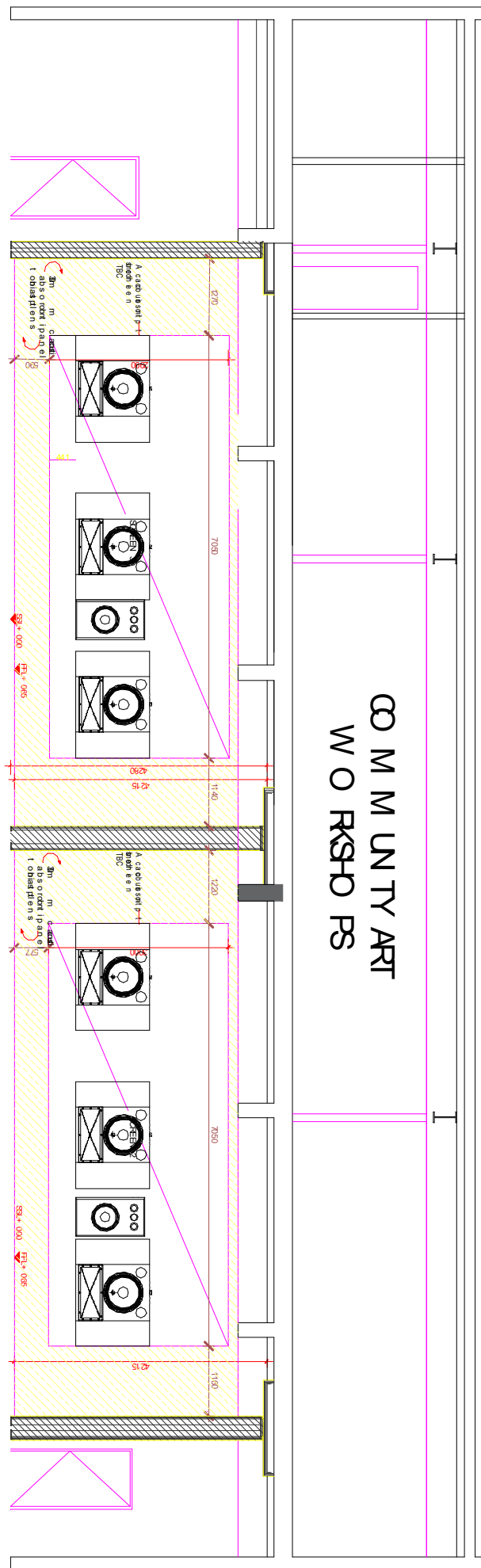
Main contract works - mechanical

- Supply and installation of suitable pattresses and mounting
- Acoustic work behind screen

Main contract works - electrical

- Mains supply behind screen -

Screen elevation - shown off stage





## Electrial

### ***Summary of works by supplier***

#### **AV -**

Supply and install of all rack gear

Connection to first and second fit cabling supplied and installed by others

Ideally each trade would do their own cabling however there are areas such as the surround speakers and high level theatre works that may be best to complete out-of-programme. Containment is required under the main contract for these cables. This needs to be well segregated from any mains cable and in two parallel yet separated runs as the speaker cables need 300mm clearance from any data cabling. Typically this would be 2 x 200mm trays or 2 x 100mm x 100mm steel trunking runs. Access to these runs must be provided for future cables and maintenance

This containment should run as follows

Projectors

Sound racks

Stages

All surround speakers

Rear of theatre - tbc

#### **Main contractor**

First fix cabling and install

Containment

Cooling or fans

Metal trunking as shown

#### ***Trunking designations***

Shown on the attached drawing.

These should all be at low level, i.e. approx 500mm off floor level (or as drawn) , on the front wall of the projection room. There should be a low level trunking with extra capacity running the entire length of the projection room, as we will need to run mains interlock/automation cables between projectors. Mains and low voltage feeds will be taken off these isolators via flexible conduit by AV contractor. All trunking should be 150mm x 150mm or similar

High level trunking needs to mate with the theatre containment and surround speaker runs - see containment

Note 2 screen spec shown

It is anticipated that the cabling and containment is installed under the main contract to the AV suppliers spec

#### ***Utility outlets / containment . cable routes***

Cable routes need to be to the areas listed above and should be subject of further discussion - some of these are sensitive whereas others can be incorporated within the theatres normal IT systems. Most vital however is separation of mains, speaker and line/data level signals

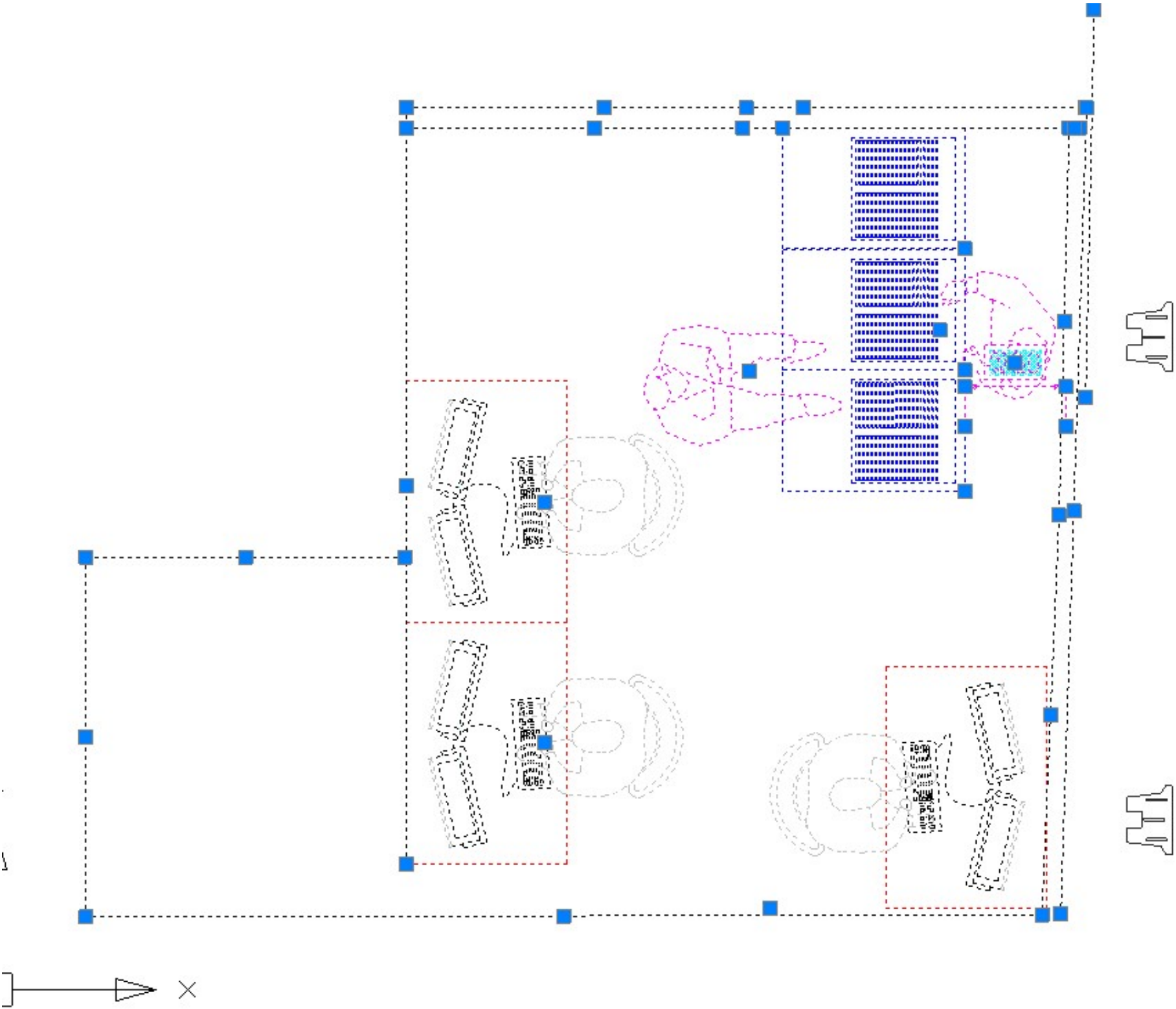
Utility outlets are drawn throughout the server room - there may seem a lot however in practice they get used up. Feel free to reduce as these aren't all needed for service

#### **Separation , containment**

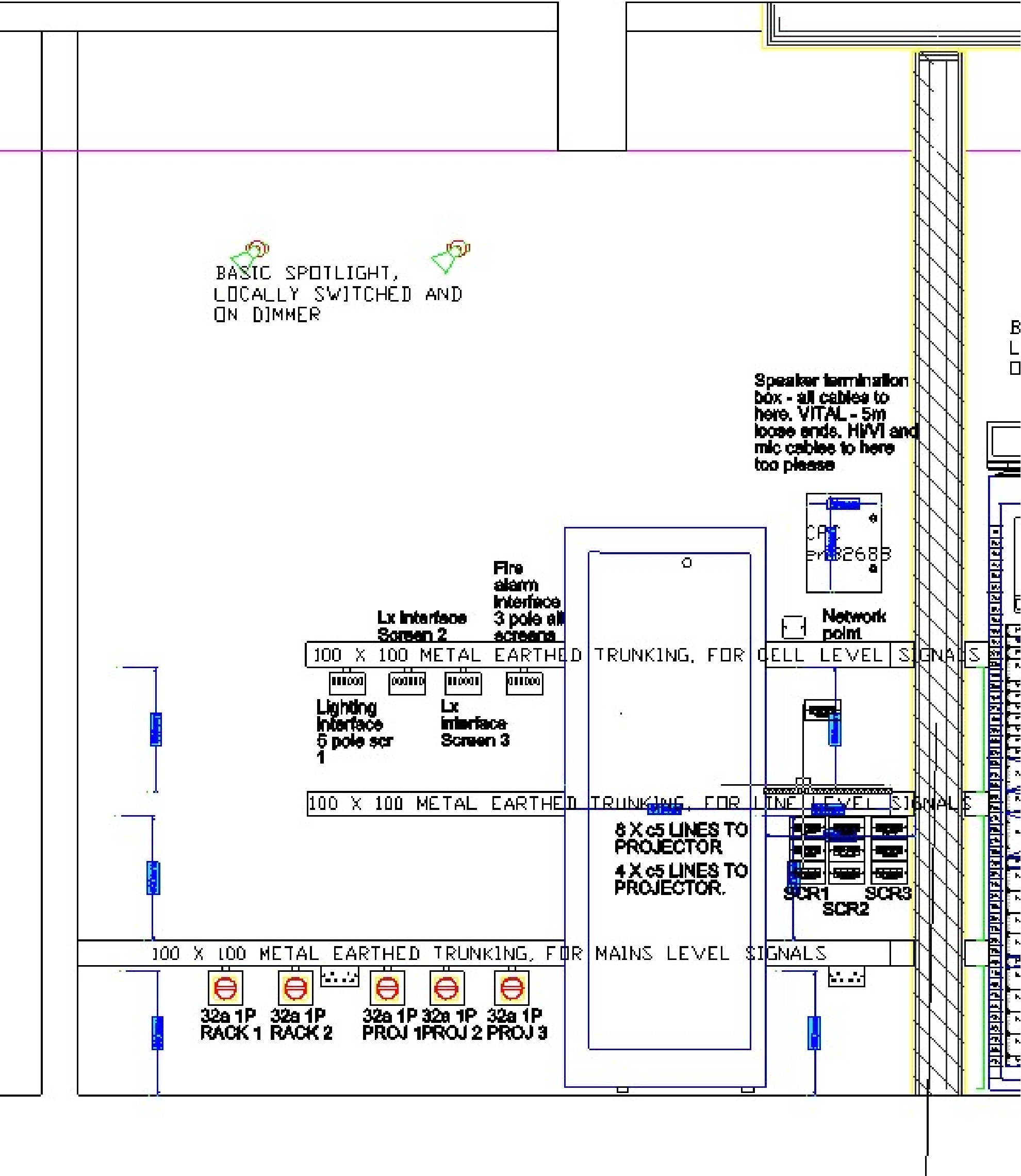
- Server room / office - Three runs of steel 100mm x 100mm trunking, running around the perimeter of the room. This would be used by both the main contractor for first fix low voltage (high level) and mains voltage (low level) signals and would need to continue to the following places.

- Screen front
- All speakers
- Foyer speakers tbc
- Satellite dish tbc
- All projection enclosures
- Side wall IR and lighting position

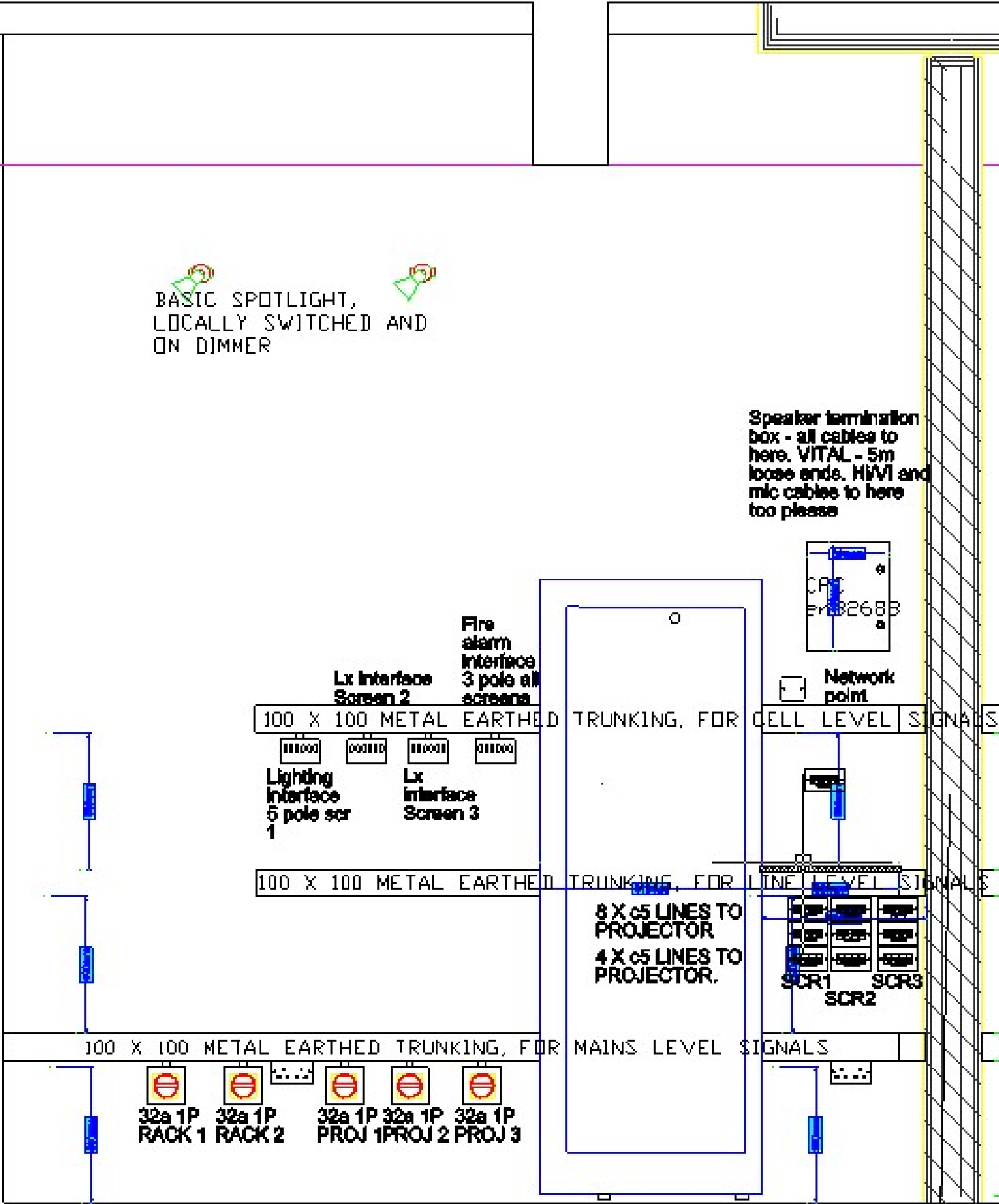
Cable and trunking routes are up for further discussion-



Server room – plan



Server room – left wall elevation



Server room – far wall elevation



POWER SCHEDULE - CATFORD

Office / Server room

Rack 1	32A single phase coupled to 100x100mm trunking, for rack 1. Phase x
Rack 2	32A single phase coupled to 100x100mm trunking, for rack 2. Phase x
Proj 1	32A single phase isolator feeding projector and spur, shown on projector port detail
Proj 2	32A single phase isolator feeding projector and spur, shown on projector port detail
Proj 3	32A single phase isolator feeding projector and spur, shown on projector port detail
13a	Double 13A for ancilliary kit

Projector 1	
Projector power	32A single phase switched from isolator in office
Fan	13A fused hard wired spur switched from projector isolator in office
C5 x 2	(detailed in data schedule)
13a	Double 13A for ancilliary kit

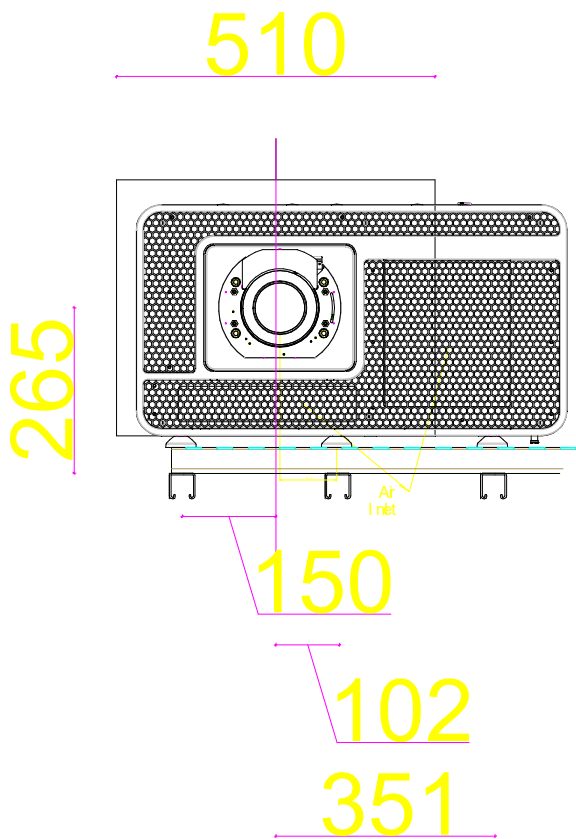
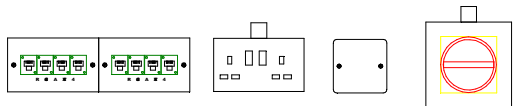
Projector 2	
Projector power	32A single phase switched from isolator in office
Fan	13A fused hard wired spur switched from projector isolator in office
C5 x 2	(detailed in data schedule)
13a	Double 13A for ancilliary kit

Projector 3	
Projector power	32A single phase switched from isolator in office
Fan	13A fused hard wired spur switched from projector isolator in office
C5 x 2	(detailed in data schedule)
13a	Double 13A for ancilliary kit

Mains electrical

Projection electrics

ASIC SPOTLIGHT, LOCALLY  
WITCHED AND ON DIMMER



BASIC SPOTLIGHT, LOCALLY  
SWITCHED AND ON DIMMER

410

Projection power supplies

(AV contractor to confirm local requirements - positions remain static)

32A 1P + N - a 32 amp. three phase plus neutral and earthing point isolator to feed Xenon power supplies, expected load approx 10A continuous. (3). Switched from control room

13A double outlet - switched 13A double outlet for test equipment etc - not in constant use

As shown from left;  
Cat 5 patch 1 – 4  
Cat 5 patch 5 – 8  
Accessory outlet

Spur fed off office feed  
32A switched outlet for projector – off office isolator

Working lights	
Light p1	Locally switched 60w task lamp for service and access
Light p2	Locally switched 60w task lamp for service and access
Light p3	Locally switched 60w task lamp for service and access
Server room	Locally switched 60w task lamp for service and access

MISC SCHEDULE -  
CATFORD

Lighting	Office wall 1	Locally switched task light for service and show state
	Office wall 2	Locally switched task light for service and show state
	Office wall 3	Locally switched task light for service and show state
	Office wall 4	Locally switched task light for service and show state
	Office wall 5	Locally switched task light for service and show state
	Office wall 6	Locally switched task light for service and show state
	Projector 1	Locally switched task light for service and show state
	Projector 2	Locally switched task light for service and show state
	Projector 3	Locally switched task light for service and show state

Low voltage electrical  
Network

Almost all of the AV gear to be installed is IP controllable, so we propose the installation of an internal wired and wireless network for same control. This would allow

- client adjustment of sound etc in the theatre via theatre laptop
- technician mixing of sound in theatre
- external control of DCP screenings
- setting up events - the technician can be with the client rather than in the back room
- diagnostics and updates are greatly simplified

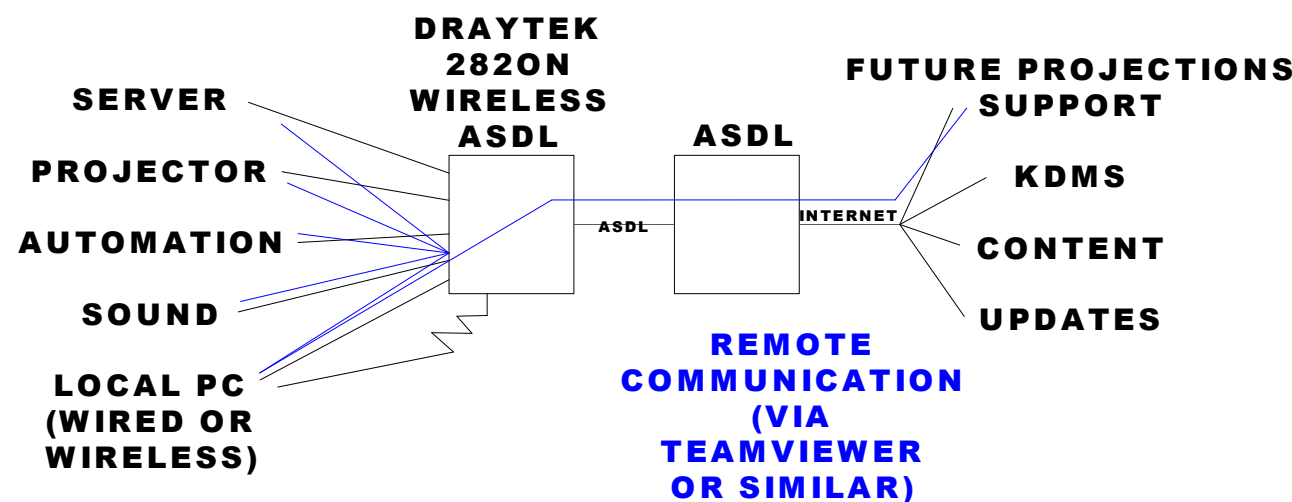
We propose the installation of 2 x static PCs in the control room with an additional wireless laptop.

In addition we recommend installation of wireless internet throughout the space - we have assumed tat this is in place and have not detailed that here

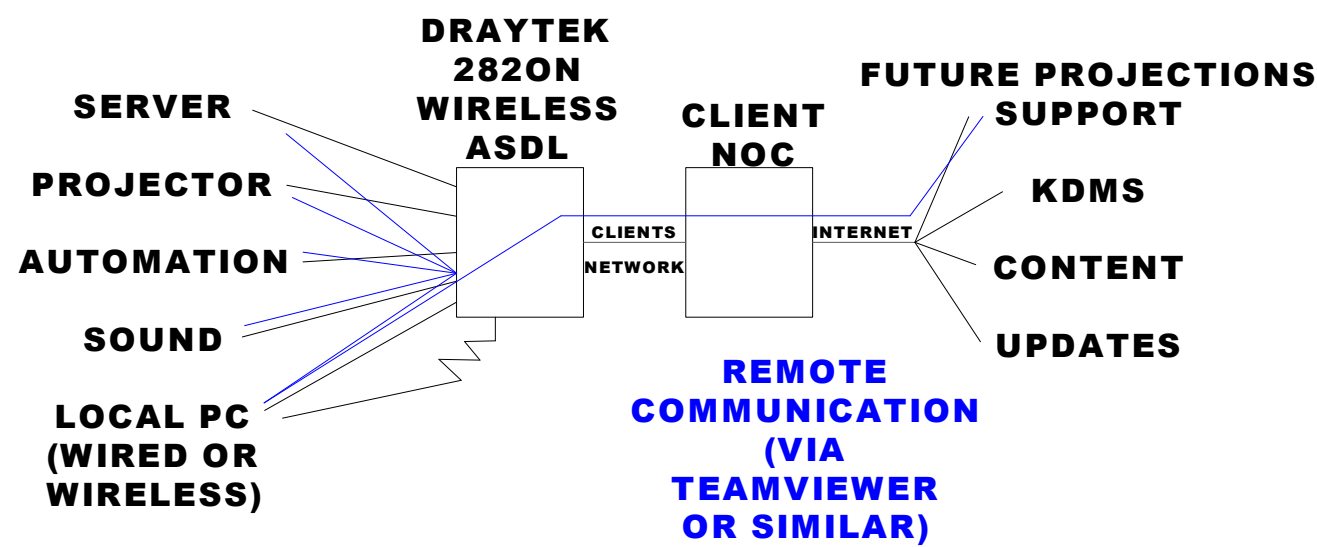
Whilst not vital for it's operation, real world connectivity is priceless for maintenance and support. With this installed, either ourselves or the manufacturers can offer remote support and diagnostics whereas without this we are relying on telephone support and cannot guarantee the instant fixes that we may be able to offer remotely. We strongly recommend a dedicated ASDL line or connection to an existing network where we can dial in remotely. This should be on the wall in front of the projector, as shown on the drawings

We can connect in either of the following ways

1. We can connect our ASDL router to a dedicated line. This is our preferred option, as it is simplest and requires no local IT support or interfaces. In this instance there is spare capacity for other uses of the internet connection.

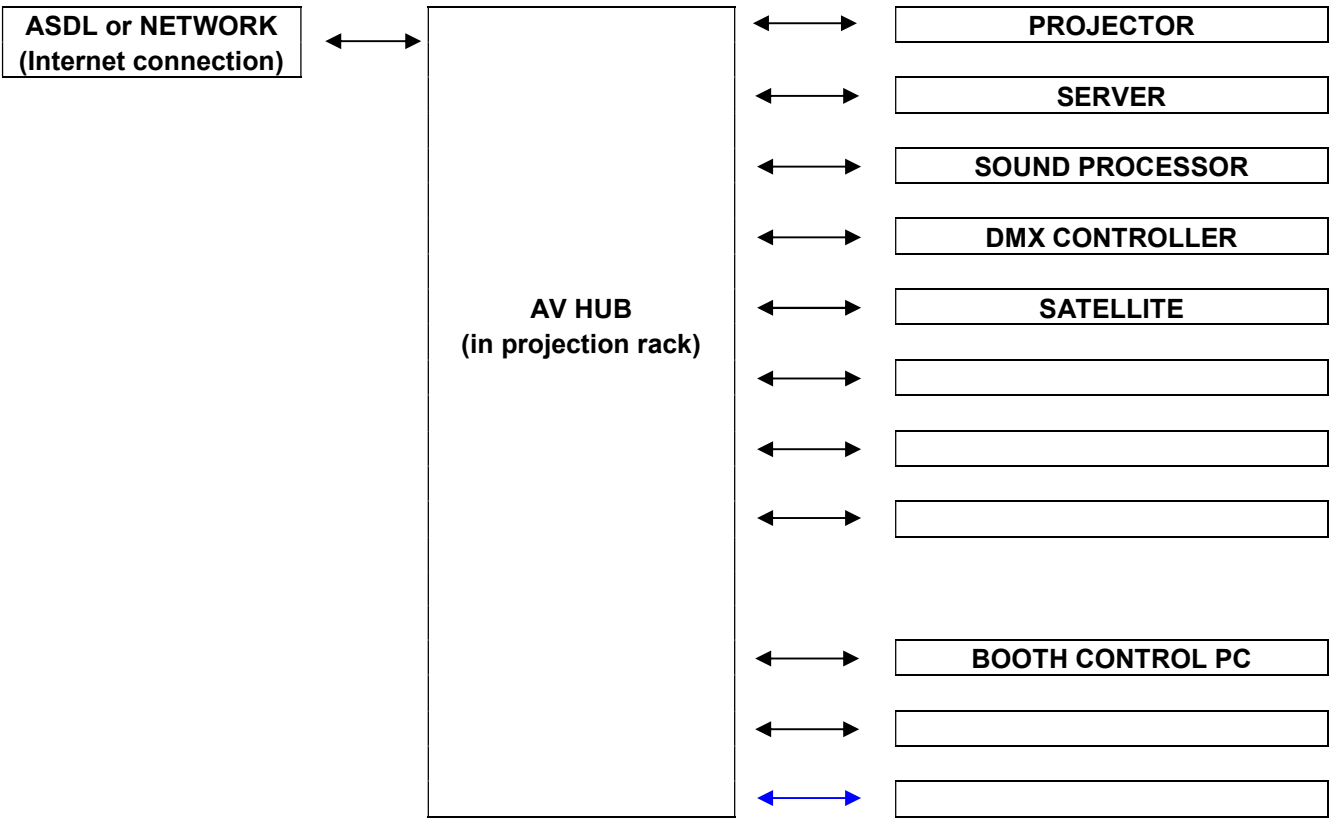


2. Network - We can connect our router to an existing network however the IP settings of our system are fixed and therefore the network needs to allow us internet access without altering our network.



The simplest test of a network for suitability is to plug a PC in to the apt network point and without changing settings see if you can access the internet.

Block diagram



Interfaces	Lighting scr 1	Shown on elevation, 5 scene dry contact recall unit for lighting, FP providing 5 sets of low volt n/o contacts
	Lighting scr 2	Shown on elevation, 5 scene dry contact recall unit for lighting, FP providing 5 sets of low volt n/o contacts
	Lighting scr 3	Shown on elevation, 5 scene dry contact recall unit for lighting, FP providing 5 sets of low volt n/o contacts
	Fire alarm	Shown on elevation - 3 sets of normally open (closed fire) contacts for shutting down cinema

Termination boxes

- 400 x 300 pvc electrical box, for lose running of speaker xables (we may install DIN rail later), Lx supply and fit,
- Stage screen 1
- Stage screen 2
- Stage screen 3
- Office wall

NOTE - cable lengths 5m and location important

ASDL - Network

As shown on office wall, critical to be commissioned before installation

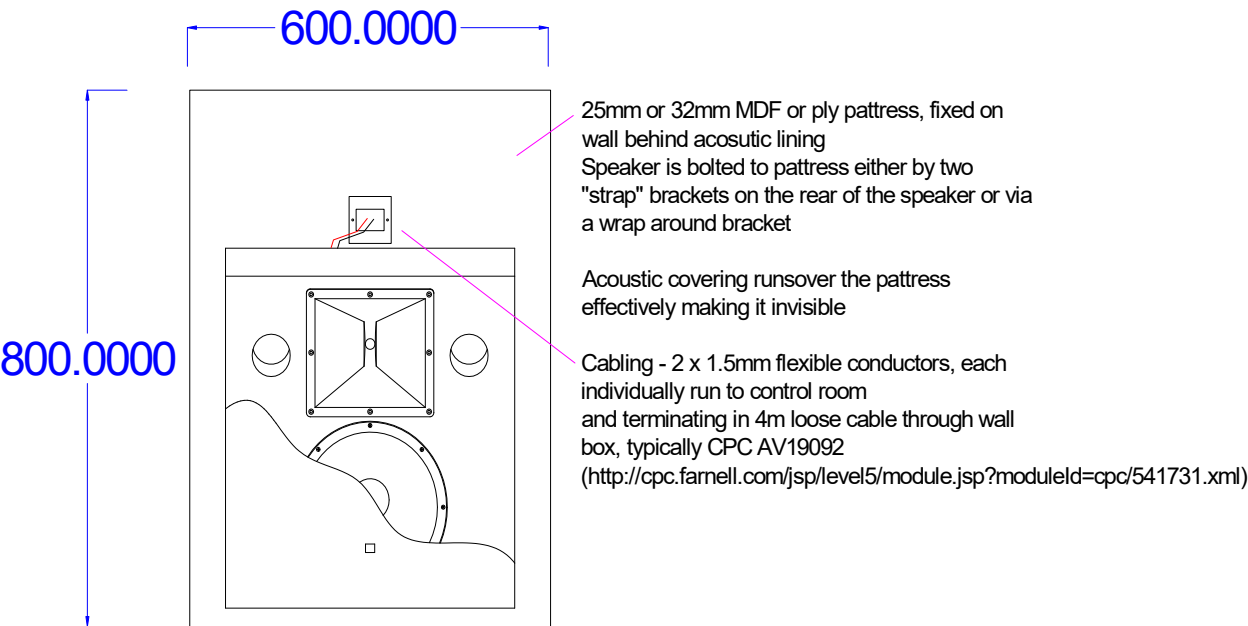
Speakers and wiring

Speakers

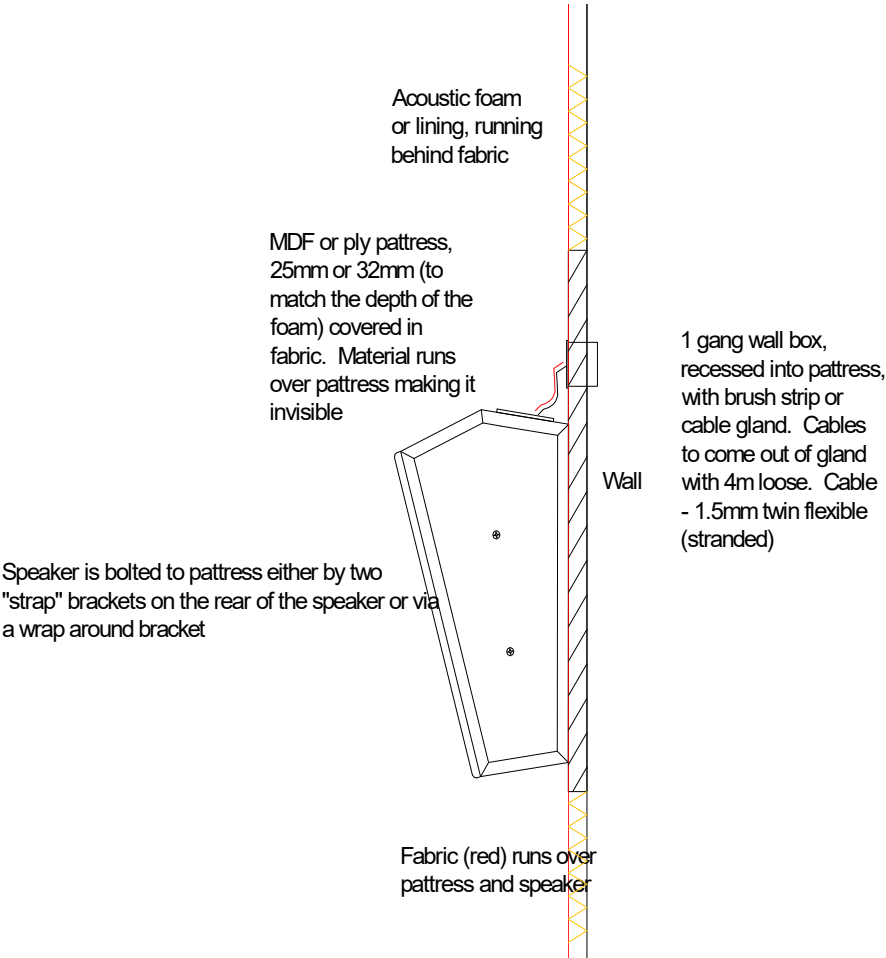
We propose  
JBL 3 way stage speakers, typical cc211  
JBL 3635B subs  
JBL 8320 surrounds

Speaker pattresses

The following pattresses should be supplied and fitted by either the main build contractor or the acoustic wall specialist. Where surround speakers are shown on the ceiling, 1 x 32mm plywood or MDF should be available to mount the speakers on in the drawn position



Surround pattress and cabling - wall elevation



Surround speaker pattress and wiring - cross section through the speaker

Speaker details are as follows;

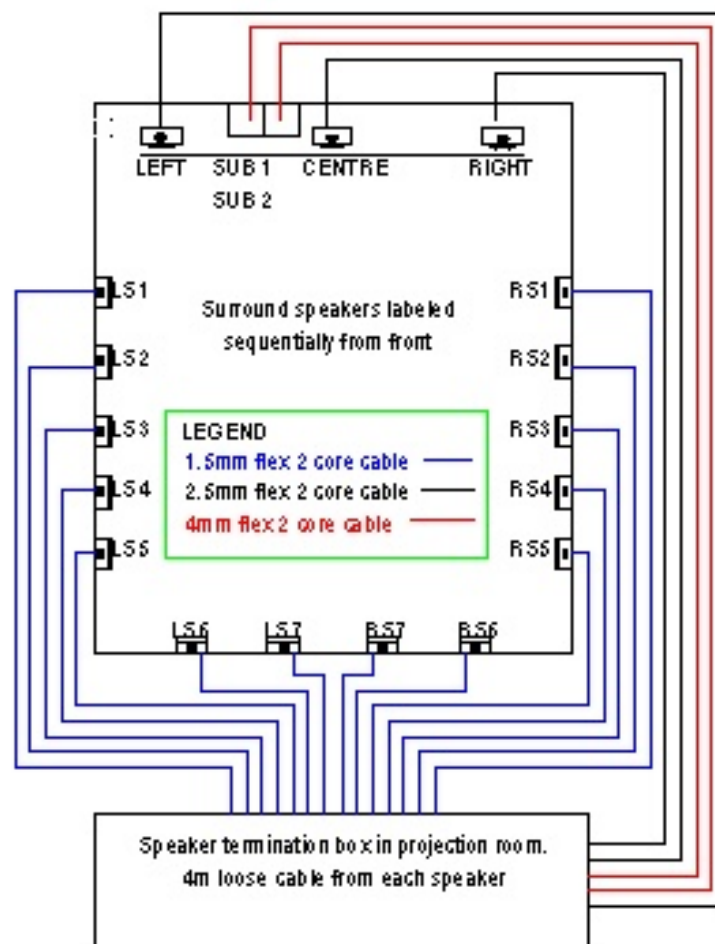


## A black and white photograph of two JBL studio monitors. The monitor on the left is shown from the front, featuring a large circular woofer and a smaller tweeter. The monitor on the right is shown from the back, revealing a grid of small, pyramid-shaped acoustic absorbers and a central circular port. Both monitors have a sleek, rectangular design with rounded edges.

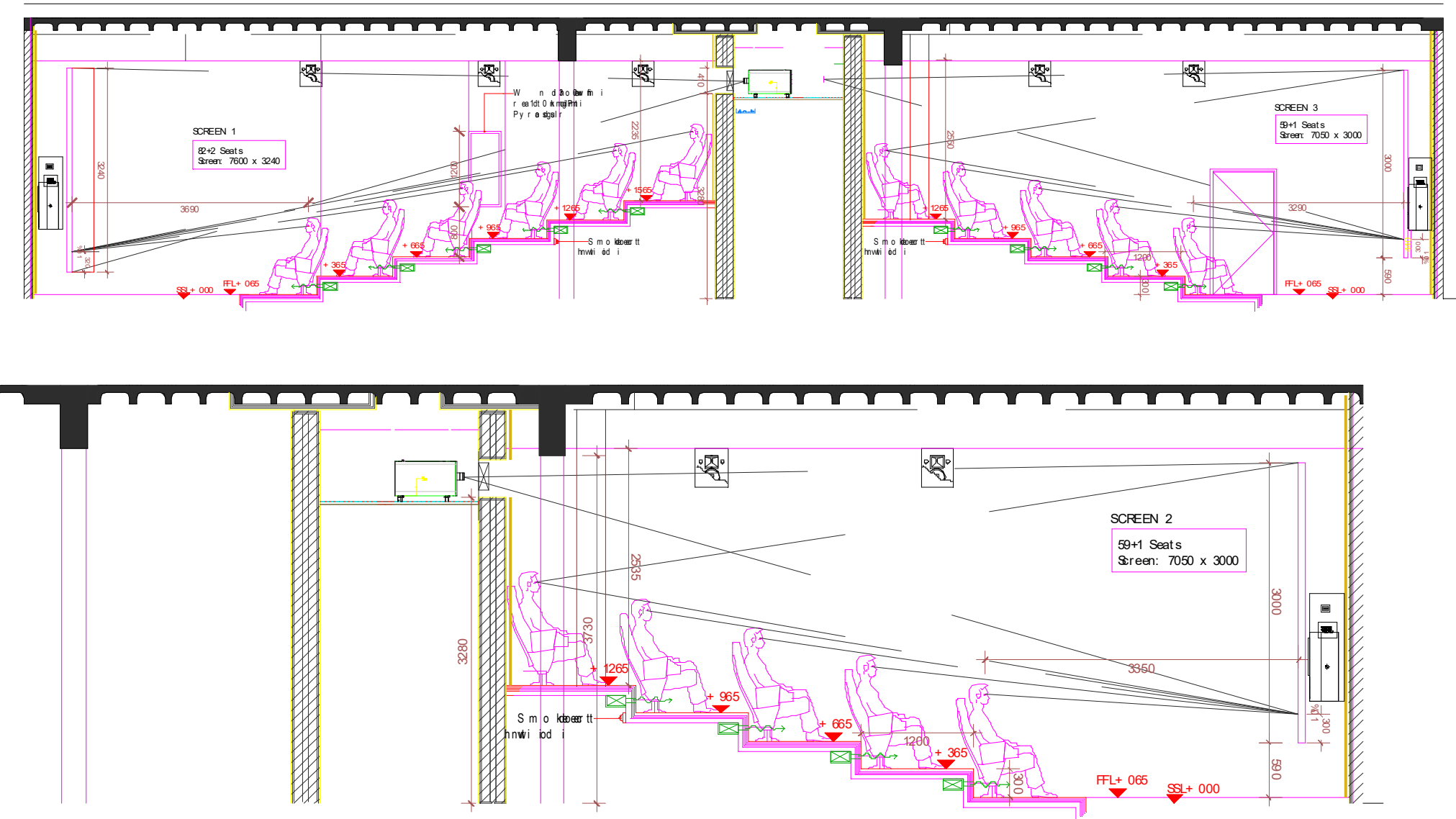
H	457mm
W	457mm
D	260mm at the top
Weight	8.6KG

Surround speaker cabling should be recessed within the side and rear walls of the theatre and as such needs to go in far earlier than the rest of the AV cabling. We recommend that both the containment and the cabling is installed early in the project by the main electrical contractor, including the wooden pattresses (required if the speakers are to be fitted to acoustic panels)

Provisional locations for the surround speakers are shown on the elevations. EACH surround speaker needs a run of 1.5mm twin flex (or two tri-rated conduit runs) back to the speaker termination box in the control room. This means that if there 12 speakers then 24 cables will be run back to the booth. The speaker installer will mount the speakers and terminate the cables however to do this at least 4m cable should be left unterminated at each end. In the projection room the speaker cables should be labelled as per the following drawing.



For the overhead and under floor speakers, either bus trunking or individual runs are OK

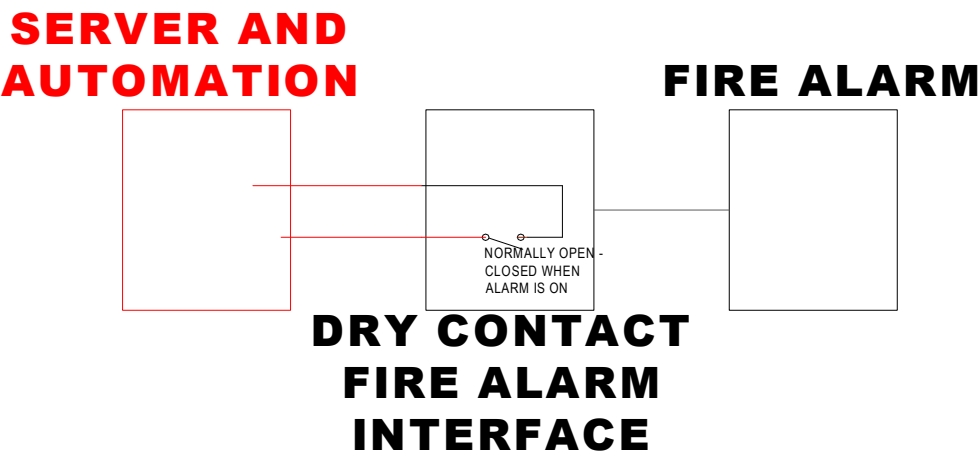


Interfaces;

Fire alarm and safety interfacing

A fire alarm interface is shown on the elevations. This is required to stop the projectors and mute the foyer sound in the event of a stage 2 fire alarm. A three pole interface is needed

3 x dry contact, (normally open, closed when alarm) interfaces are required to mute the sound both the projection room and the theatre equipment rack the event of a fire. Rating is signal only – 5mA, 24VDC. Shown on elevations. AV will cable from this interface to our automation system. Items in black are assumed as supplied with the building, items in red are inside the server - wiring in red by AV



Dimmer

Lighting scenes

- 1 Blackout
- 2 Show
- 3 Walk in
- 4 Adverts trailers
- 5 Cleaners / conference

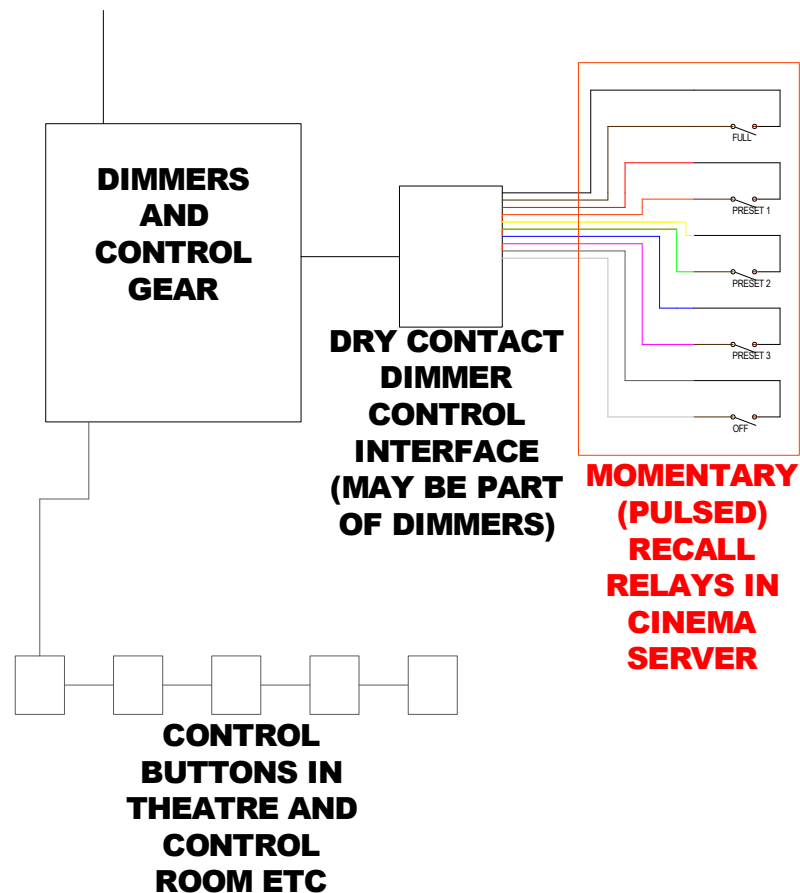
Dimmer interfaces

We have capacity to interface with most desks via dry contact closures. In this case we would provide four sets of low voltage normally open contacts, to select four lighting scenes. These could be

- Full / Function
- Walk in (75%)
- Presentation / low (25%, none or task lighting on stage)
- Show (Off or 5%)

The location of this interface is shown on the elevation.

# **LANTERNS AND FIXTURES IN THEATRE**



- Final connection from automation to lighting interfaces

- all mains supplies
- dist board in control room
- containment
- lighting GPI interfaces as outlined

Box 1a	4 x C5 outlets on 2g box
Box 1b	4 x C5 outlets on 2g box
Box 2a	4 x C5 outlets on 2g box
Box 2b	4 x C5 outlets on 2g box
Box 3a	4 x C5 outlets on 2g box
Box 3b	4 x C5 outlets on 2g box

Office shown on drawing  
Office shown on drawing  
Office shown on drawing  
Office shown on drawing  
Office shown on drawing  
Office shown on drawing

Projector area shown on elevation  
Projector area shown on elevation  
Projector area shown on elevation  
Projector area shown on elevation  
Projector area shown on elevation  
Projector area shown on elevation

Stage 1	4 x C5 outlets on 2g box
Stage 2	4 x C5 outlets on 2g box
Stage 3	4 x C5 outlets on 2g box

Office shown on drawing  
Office shown on drawing  
Office shown on drawing

Stage area shown on elevation  
Stage area shown on elevation  
Stage area shown on elevation

HI1a audio	Audio line level cable
HI1b audio	Audio line level cable
HI2a audio	Audio line level cable
HI2b audio	Audio line level cable
HI3a audio	Audio line level cable
HI3b audio	Audio line level cable

Speaker term box in office - 5m tail  
Speaker term box in office - 5m tail  
Speaker term box in office - 5m tail  
Speaker term box in office - 5m tail  
Speaker term box in office - 5m tail  
Speaker term box in office - 5m tail

Stage box each screen - 5m tails  
Stage box each screen - 5m tails  
Stage box each screen - 5m tails  
Stage box each screen - 5m tails  
Stage box each screen - 5m tails  
Stage box each screen - 5m tails

HI1 psu	3 core 1.5mm mains flex
HI2 psu	3 core 1.5mm mains flex

Speaker term box in office - 5m tail  
Speaker term box in office - 5m tail

Stage box each screen - 5m tails  
Stage box each screen - 5m tails

HI3 psu	3 core 1.5mm mains flex	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
SPEAKERS			
Screen 1			
1left	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
1centre	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
1right	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
1sub	4mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
1ls1	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
1ls2	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
1ls3	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
1ls4	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
1rs1	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
1rs2	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
1rs3	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
1rs4	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
Screen 2			
2left	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
2centre	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
2right	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
2sub	4mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
2ls1	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
2ls2	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
2ls3	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
2ls4	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
2rs1	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
2rs2	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
2rs3	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
2rs4	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
Screen 2			
3left	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
3centre	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
3right	2.5mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
3sub	4mm twin	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
3ls1	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
3ls2	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
3ls3	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
3ls4	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
3rs1	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
3rs2	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
3rs3	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
3rs4	1.5mm twin	Speaker term box in office - 5m tail	1 gang recessed box behind speaker - see detail - 2m tail
Audio runs to stage			
1line1	Audio line level cable	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
1line2	Audio line level cable	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
2line1	Audio line level cable	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
2line2	Audio line level cable	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
3line1	Audio line level cable	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
3line3	Audio line level cable	Speaker term box in office - 5m tail	Stage box each screen - 5m tails
LOCAL CCTV			
Video 1	COAX	Speaker term box in office - 5m tail	3m tail near projector window (tbc) in projector space
Power 1	1.5mm three core	Speaker term box in office - 5m tail	3m tail near projector window (tbc) in projector space
Video 2	COAX	Speaker term box in office - 5m tail	3m tail near projector window (tbc) in projector space
Power 2	1.5mm three core	Speaker term box in office - 5m tail	3m tail near projector window (tbc) in projector space
Video 3	COAX	Speaker term box in office - 5m tail	3m tail near projector window (tbc) in projector space
Power 3	1.5mm three core	Speaker term box in office - 5m tail	3m tail near projector window (tbc) in projector space



The following real-world interfaces are suggested, wired to the rack position on the drawings

If required, a RF feed, and ideally a cable or satellite decoder, should be located near to the sound rack. Note that at this stage no tuner facilities have been incorporated however adding these is simply a matter of purchasing a video recorder. A direct feed from the satellite or cable system should be installed into the projection racks - works by others, please advise who an we will liase with. NOTE - if the scaler option is not chosen then the satelitte receivers need to go in the projection enclosures

Whilst not vital for it's operation, real world connectivity is priceless for maintenance and support. With this installed, either ourselves or the manufacturers can offer remote support and diagnostics whereas without this we are relying on telephone support and cannot guarantee the instant fixes that we may be able to offer remotely. We strongly recommend a dedicated ASDL line or connection to an existing network where we can dial in remotely. This should be on the wall in front of the projector, as shown

### Cable types

Our reference	Reference	Cable	US Equiv	Supplier
BLK 4		Black 4mm tri rated - multi stranded flexible conductor (not solid)	6AWG	
RED 4		Red 4mm tri rated - multi stranded flexible conductor (not solid)		
BLU 4		Blue 4mm tri rated - multi stranded flexible conductor (not solid)		
YEL 4		Yellow 4mm tri rated - multi stranded flexible conductor (not solid)		
BLK 6		Black 6mm tri rated - multi stranded flexible conductor (not solid)	2.5AWG	
RED 6		Red 6mm tri rated - multi stranded flexible conductor (not solid)		
BLU 6		Blue 6mm tri rated - multi stranded flexible conductor (not solid)		
YEL 6		Yellow 6mm tri rated - multi stranded flexible conductor (not solid)		
BLK 2.5	359 065	Black 2.5mm tri rated - multi stranded flexible conductor (not solid)	10AWG	RS
RED 2.5	359 043	Red 2.5mm tri rated - multi stranded flexible conductor (not solid)		RS
BLU 2.5	724 4181	Blue 2.5mm tri rated - multi stranded flexible conductor (not solid)		RS
YEL 2.5	359 100	Yellow 2.5mm tri rated - multi stranded flexible conductor (not solid)		RS
BLK 1.5	717 4173	Black 1.5mm tri rated - multi stranded flexible conductor (not solid)	18AWG	RS
RED 1.5	717 4151	Red 1.5mm tri rated - multi stranded flexible conductor (not solid)		RS
BLU 1.5	724 4187	Blue 1.5mm tri rated - multi stranded flexible conductor (not solid)		RS
YEL 1.5	717 4149	Yellow 1.5mm tri rated - multi stranded flexible conductor (not solid)		RS
MULTICORE	660 058	12 core screened 0.5mm	25AWG	RS
HDSDI		Belden Brilliance® 1694A & 1694F Precision HDTV Video Cable		Bryant
AUDIO		9000 Series 'FST' Style Single Pair Analogue Audio Installation Cable		Bryant
TWIN AUDIO		OFC 2 Pair audio cable 4002 OFC		Bryant
VIDEO		RG 59B/U Coaxial Cable		Bryant
C5		CAT 5e UTP installation cable 305M box LS0H Grey		Bryant
C6		CAT 6 UTP Belden 7812ENH bonded pair installation cable 305M box LS0H Blue		Bryant
3CORE MAINS		Generic 1.5mm three core mains appliance flex, black	18AWG	Generic

<http://www.bryant-unlimited.co.uk/index.html>  
Bryant  
Broadcast

<http://www.rswww.com>  
RS  
Components

TAILS (x m)	Leave x meters of tails in the marked position. FP will terminate (note - length is minimum)
ISOLATOR (x)	Wire mains into isolator - FP will make appliance connection

MAINS	(cables run with normal building mains containment, coupled to apt termination points)	
SPEAKER	100 x 100mm (or otherwise as specified) metal trunking for high current low voltage	(4" x 4")
SIGNAL	100 x 100mm (or otherwise as specified) metal trunking for signal low voltage, data etc	(4" x 4")

### Heat gains

The gear in the server rack is quiet - the servers are in the projectors - and I am guessing that you will have another rack with your own IT and ticketing systems - these probably have more onerous cooling needs than our gear. Of the gear we are installing, only the Dolby is mission critical and I have never known one fail. I believe that the server room would be OK with good ventilation (natural intake, possibly through the box office, then dedicated extract) rather than cooling. Needless to say it is a computer room and the cooler the better, but I don't anticipate any disasters if the AC was omitted. I would consider losing the wall between the server room and the office - the gear is in daily operation and should be accessible - making the room larger also helps dissipate the heat.

Heat gains

Item	BTU	Watts (heat)
Projector		
35mm 3k lamp		
D cinema 2k		
D cinema 3k		
D cinema 4k		
D cinema 6k5		
Amplifier	0	
300w running 15%	1023.6	300
300w running 15%	1023.6	300
300w running 15%	1023.6	300
	0	
Processing and amps etc	0	
Overall	3412	1000
TOTAL	6482.8	1900

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## ***Builders work***

### ***Surround speakers***

#### ***Ports***

Port positions are shown on the following drawing based on the ffl and centre line of the theatre in the projection room. Projection port positions and sizes are for clear glass area. Heights and sizes of these are critical. Glass should be either standard 9mm float glass or a previously used fire rated glass.

Some local authorities may require fire protected glass here, either with a fire rating or using glass designed to “cloud” in the event of a fire. Should this be the case we recommend Pyardur from Pilkington Glass (note that some alternatives will “cloud” when heat is passed through them. Should there be no fire requirement then 9mm float glass is perfectly acceptable – there is no need for optically pure glass.

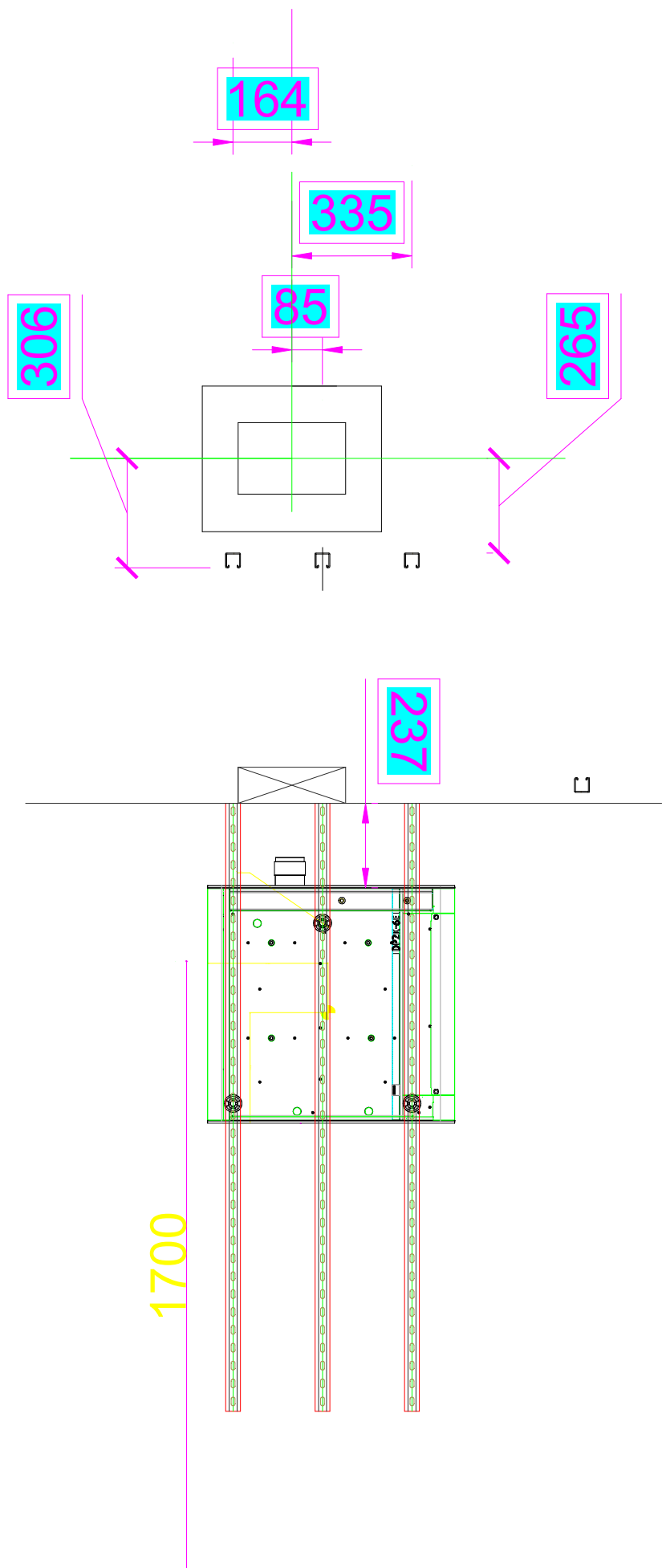
Alternatively, Securiglass manufacture a specific projection window – their details are;

Securiglass  
Canal Mills  
Elland Bridge Rd  
Elland  
W YOrks  
HX5 0SQ,

+44 (01422) 376181  
<http://www.c3ssecuriglass.com/>

Only the projection window is to be glazed - the second opening should be built to be suitable for later adding glazing. Note that the projection ports here should NOT be demountable (for noise reasons) nor double glazed.

The projection window needs to be tilted approx 6 degrees (base towards the theatre)



Projector Unistrut

3 x runs of 41mm unistrut to be straddled across projection space as shown. Layout critical – offset from centre of projector window  
Main or lx contractor supply and fit

## Satellite

### (future)

A satellite dish is required for the live relay of opera, theatre performances and potential future transfer of DCP content. Any dish installed would be 1.1m diameter on a fixed tripod base. Steerable dishes are not recommended due to the size and weight. This dish needs to point at satellite transmitters y be specified by local content providers . The dish is mounted on a number of concrete paving stones which give it both ballast and stability - no fixings are usually made to the building. Once focused, the dish is cabled via one or two coax cables to the decoder, located in our equipment rack. Key issues re satellite location are

- clear line of sight to apt transmitter
- no buildings, trees etc in the way
- a flat, solid base to fix to
- cable route to the control room
- access ! A 1.1m dish doesn't usually fit through a ceiling hatch
- protection from elements, vandalism etc

This dish needs to point at satellite transmitters almost due south, at angles varying from 32 degrees in London to 24 degrees in Scotland.

### **AV contractor -**

- Supply and install dish
- Align dish
- Provide recording twin channel receiver

### **Main contract works - mechanical**

- suitable space for dish and access

### **Main contract works - electrical**

- containment run or 4 x RJ59 runs between dish and sound rack

### **Dish, mount and blocks**

