

# Suggestions for Sound System Upgrade

Wilson Concert Hall, Rowan University

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The following pages are suggestions for the upgrade of the Concert Hall sound system. The suggestions are based on what I have seen in the whey of “needs’ over the past couple of years. Some of the things in the list my seem silly but they are attempts at one, looking into the future needs, and two, making current uses go easier and sound better. The main push a new installations should be the wiring and new speakers/amps. These pages are only suggestions and a professional engineer should create any specifications for installation. If the interest is there I can create more detailed and clearer specifications or explain them in greater detail.

**Connector Boxes**

## Pit Left

Microphone Lines 1-12  
 Speaker Lines 1-2  
 Clear Comm 1-2  
 Video Line 1  
 DMX Line 1  
 (Sound Power)  
 (Telephone)  
 (Network)

## Pit Right

Microphone Lines 13-24  
 Speaker Lines 3-4  
 Clear Comm 1-2  
 Video Line 2  
 DMX Line 2  
 (Sound Power)

## Stage Down Left

Microphone Lines 1-12,25-32  
 Speaker Lines 5-6  
 Clear Comm 1-2 (2sets)  
 Video Line 3, 4  
 DMX Line 3, 4  
 (Sound Power)  
 (Network)

## Stage Down Right

Microphone Lines 13-24  
 Speaker Lines 7-8  
 Clear Comm 1-2 (2sets)  
 Video Line 5  
 DMX Line 5  
 (Sound Power)

## Stage Up Center

Microphone Lines 25-32  
 Speaker Lines 9-12  
 Clear Comm 1-2  
 Video Line 6  
 DMX Line 6  
 (Sound Power)

Catwalk 1<sup>st</sup>

Microphone Lines 33-36  
 Speaker Lines 13-14

## Break (for connection to sound boards)

(Place in floor box)  
 Microphone Lines 1-36 (breakout)  
 Clear Comm 1-2  
 Video Line 7, 8  
 DMX Line 7, 8  
 Extra Power  
 (Light Power)  
 (Sound Power)  
 (Telephone)  
 (Network)

## Other Locations for Clear Com

Mid bridge  
 Loading Rail  
 All 5 spot positions  
 Sound, Lights, and Proj. Booth  
 Shop  
 Green Room  
 Office  
 Recital Hall

## Other Locations for Video

153,154,155,156, 163, 164  
 Shop  
 Office, Production office  
 Men's, Women's Dressing Room  
 2 to projection booth  
 Center of 4<sup>th</sup> catwalk  
 Recital Hall  
 Mid Bridge  
 Sound Studio

## Other Locations for DMX

2 in Light Booth  
 Mid bridge  
 Catwalks center of 1,2 (3,4,5)  
 Any/All electrics

## Termination Notes:

DMX terminates at dimmers SL  
 Video terminates SL  
 Clear Comm terminates at Stage Managers console  
 Microphones terminates at a patch bay in booths  
 Speaker Lines terminate at a patch bay in booths  
 (Sound Power should all come from one circuit)

**Permanent Speaker Locations**

Speakers should have their own dedicated amps and be permanently wired

Stereo House feed – speakers to be placed for full even coverage of house

Stereo Stage feed – speakers to be placed under Mid Bridge SR and air ducts SL for full coverage of stage

Mono Lobby feed – small speakers covering front of lobby (little or no bleed into auditorium)

**Dressing Room Monitor Speaker Locations and specifications**

Monitor speakers should have two speakers built in (or dual feed to one). One feed is not fadeable and is an announcement feed from stage managers console. The other feed is a program feed from a microphone up in the first catwalk, a volume control at each location. Each location should have a keyed on/off switch (one switch for both feeds).

Locations: 153,154,155,156,165,163

Men's and Women's Dressing Room

Office and Production office

Shop

Light booth, projection booth and both side booths (no stage manager feed, no switch)

Box office

**Assisted Listening**

Should be fed from the microphone at the center of the 1<sup>st</sup> catwalk plus inputs from sound board as needed.

Transmitter should be placed in projection booth with small mixer.

**Stage Managers Console** (Stage left)

2 Channel Clear Comm Unit (allow access to jumper for use of outside units)

Video Monitor

4 channel remote mixer and remote amp switch (for feeding and controlling sound from SL)

- this should have patch positions in the booth patch bay (4 in, 1 out)

- remote amp switch to turn on house speaker array

Cheep CD/Tape player (with connections in patch bay)

House Light Control

Remote Dimmer control (connector)

(Non-dim Control?)

**Video Specifications**

All video lines should run to a location Stage left to some sort of patch bay. The lines should be able to patch either for the monitor cameras or for higher quality feeds such as a VCR's, color video cameras, televisions, and video projector (in booth).

- 1 infrared video camera mounted on 4<sup>th</sup> catwalk

- 1 portable video camera (with mount for in pit)

- 5 B&W Video monitors

- 2 @ Stage managers console

- Mid bridge or rail

- Office

- Sound Studio/Spare

**DMX Termination**

All DMX lines should terminate Stage left (next to the dimmer racks). They should be patchable so as to redirect feeds from one location to another. There should also be some sort of DMX multiplexer(?) that can handle all catwalk and electric locations as outputs (multiple input locations).

**Booth Patch Bay**

Should be placed in either old spot booth or preferably in projection booth. The patch bay should not be put in the sound booth so as to allow room for other equipment. Outputs from board to the house and stage speakers should have defaults when nothing is patched. Same with the inputs (especially CD/Tape player). Allow room for larger soundboards in future.

36 – Microphone inputs	4 – Remote mixer inputs
x – Mixer (Microphone level) inputs	1- remote mixer output
x – Mixer (Line Level) inputs	x – outputs from CD/Tape players
x – Mixer outputs	x – inputs to Tape players
2 – House speaker/amp inputs	8 – lines to recording studio (or whatever currently exists)
2 – Stage speaker/amp inputs	1 – extra feed for Monitor speakers
1- Lobby input	1 – extra feed for assisted listening
14 – amp inputs (for future expansion)	

**Amp Specs**

Amps should be placed in a cool, isolated area with sound deadening (storage room off of light booth?) within the same racks should be a patch bay specific for the Amps. The original purchase of amps can be minimal and more can be added as needed. There should be sufficient power to feed up to 7 amps (stereo). Wiring should be able to accommodate outside amplifiers that may be rented until all units are eventually purchased. The patch bay should also be able to accommodate outside amplifiers when more powerful amps are needed or when amps go down. The amps should be matched to any speakers purchased. Old amps may be used with old speakers so the system should be designed to temporarily hold them.

Permanent speaker amps should also be located with the rest of the amps. There is no need to make these patchable.

Dressing room monitor amps should also be located with the rest of the amps

**Speaker Specs**

Permanent house, stage monitor and lobby speakers should be specified by a professional sound designer.

See “Dressing room monitor specifications” for Dressing room monitors

Portable stage monitors should be specified by a professional sound designer there main use is for a band monitors.

**Clear Comm Specs**

Use current headsets and base station.

Base station should be moved to stage managers console

Connectors should be a single connector for both channels with a mini switch to go between the different channels

**Sound Booth Specs**

Use current soundboard. (it is not top of the line but still a good board)

Use current CD/tape player

Get DAT Player

Players should be mounted within easy reach of soundboard.

A shelf or table should be mounted in booth. To hold tapes.

(Replace the windows with a roll up door?)

**Break Connection Specs**

The connector box at the center of the break should be set up so that touring companies or rental companies can connect there sound board and effects equipment in at break and make use of our amps and feed lines. It might be worth looking into some sort of break out for the microphone lines

**Power Specifications**

All power for sound should come off of a central circuit panel. This panel should be as isolated as possible from the dimmer racks and any other potential source of interference. This power supply should also contain some sort of power conditioner. A dual outlet should be placed at each location (connector box) as noted and labeled "For sound use only!" The power line runs should never be right next to the other cable runs and always cross at right angles.

Light Power should come from the same disconnect that the dimmers are using and be labeled "For Light use only!" These outlets should be power conditioned and only need to be in the light booth, break, and by the dimmers.

**What comes first**

Do the wiring first, and do it all!