

RPS School Hall Sound System Upgrade

Brief:

- I was asked to look at options to upgrade the sound system in the RPS Hall. The current amp and speaker system is quite old technology, using old amp and passive (unpowered) speaker technology.
- The amp/speaker system has not been able to cope with demands for the P&C annual auction evening, the largest single fundraising event for the school.
- The speakers suffer distortion at an inadequately high volume for functions with 300+ people.
- The speakers feedback at volumes which are not high enough for speakers to be heard, making speeches, auction events, etc difficult and frustrating.
- Sound quality has been disappointing for student events, such as the annual Year 5/6 performance, and the K-2 Christmas Concert.
- Also, the existing mixing console is 8 channels only, all of which are in use, leaving no scope of expansion.

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Scope:

I had discussions with Messrs Moran, Brown and Clegg, and also members of the RPS P&C dads' band to get their opinions on:

- the shortcomings of the current system
- a wishlist of improvements
- a minimum list of requirements
- limitations in what could be done in the hall (ie cable access, etc)

I then discussed RPS's sound needs with both Icon Music, Ryde and Turramurra Music Centre and asked them both for quotes on sound systems.

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Outcome of preliminary discussions:

- RPS currently has 6 wireless headset microphones; 1 wireless handheld microphone and 1 CD/DVD player which fill all 8 input slots on the current mixer console.
- It would be desirable to have an additional input for music input from an iPod, USB, etc, rather than relying on CDs.
- The band determined that it is desirable to have a stagebox (ie input box on stage with cables run to the console) with at least 7 inputs to feed to the console.
- Total inputs required = 16.
- Mr Brown also explained that the handheld wireless microphone is at the end of its working life, having been repaired several times, and should be replaced. Icon Music told me the handheld wireless mic does not meet current wireless frequency requirements, so should be replaced.
- There is a hum through the speakers that appears to be from the hall lights. It may be required to get in an electrician to confirm. Outcome may be to put in a new power circuit to separate lighting and sound systems.

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Option 1 – high end, future proof (Icon Music):

Item	Brand	Qty	Unit Price	Price
Mixer - Digital 40 input 25 BUS rack mountable	BEHRINGER	1	\$ 2,494.11	\$ 2,494.11
Speakers - 1400W powered D CLASS	Line 6	2	\$ 1,579.21	\$ 3,158.42
Subwoofer- 1200W active 2 X 12 inch	Line 6	2	\$ 1,895.21	\$ 3,790.42
Stagebox- Digital 16 in/8 out	BEHRINGER	1	\$ 1,427.99	\$ 1,427.99
Stagebox digital cable NCAT5E-50M	BEHRINGER	1	\$ 503.14	\$ 503.14
Speaker (mic) cable 100 FT	Tourtek	1	\$ 104.99	\$ 104.99
Speaker (mic) cable 50 FT	Tourtek	1	\$ 65.24	\$ 65.24
Speaker (mic) cable 10 FT	Tourtek	2	\$ 25.50	\$ 50.99
Microphone - handheld wireless + receiver	Shure	1	\$ 970.00	\$ 970.00
TOTAL				\$ 12,565.30

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Option 2 – standard (Icon Music):

Item	Brand	Qty	Unit Price	Price
Mixer - 16/20 channel with FX & USB*	Yamaha	1	\$ 879.00	\$ 879.00
Speakers - 1000W powered D CLASS**	QSC K12	2	\$ 1,294.00	\$ 2588.00
Stagebox - analog 30m multicore 12 in/4 out	Soundking	1	\$ 466.00	\$ 466.00
Speaker (mic) cable 100 FT	Tourtek	1	\$ 104.99	\$ 104.99
Speaker (mic) cable 50 FT	Tourtek	1	\$ 65.24	\$ 65.24
Microphone – cardioid handheld wireless + receiver	Shure	1	\$ 970.00	\$ 970.00
TOTAL				\$ 5,073.23

NB, cf Option 1:

- Analog mixer, not digital, cf Option 1
- Lower rated speaker cf Option 1
- Fewer mixer inputs
- No subwoofer
- * This is the largest analog rack mountable mixer available. To have more inputs means either having a desk, or going digital.
- **includes cost of wall mounts

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Option 3 – standard (Turramurra Music):

Item	Brand	Quantity	Unit price	Price
Mixer - 16/20 channel with FX & USB	Yamaha	1	\$744	\$ 744
Speakers - 1000W powered D class*	QSC K12	2	\$1,275	\$ 2,550
Stage box 16/4 30m	Maximum	1	\$438	\$ 438
Cardioid Wireless Hand Held Mic	Sennheiser	1	\$670	\$ 670
Speaker cables			\$90	\$ 90
TOTAL				\$ 4,492
<i>CD/DVD Player, rack mountable**</i>	<i>Tascam</i>	<i>1</i>	<i>\$715</i>	<i>\$ 715</i>
<i>Installation** (more next slide)</i>			<i>~\$1000</i>	<i>\$ 1000</i>

NB:

- *Includes cost of wall mount brackets
- **CD/DVD player & installation separate to allow comparison of quotes
– Icon did not quote on CD/DVD, and do not install.

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Additional components not included:

- Electrician to determine cause of “hum” from lighting through sound system. Fixing this may require installation of a separate electrical circuit for both lighting and sound.
- Electrician to confirm power supply available for speakers is adequate.
- Subwoofer (can upgrade later, if required)

Re: Installation:

Turrumurra Music estimated about \$1000. Icon Music don't install. It's possible Mr Clegg could install (with a band father or 2 lending a hand). I need to check on whether installation includes setting levels on the mixer, etc.

Questions? Contact:

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