



**University of Wisconsin
Camp Randall Stadium**

SOUND REINFORCEMENT RECOMMENDATION

**Attention:
Jeremy Shecterle
J. P. Cullen & Sons, Inc.**

**From: Larry Lucas, Director of Audio Engineering
Anthony James Partners
3900 Westerre Parkway, Suite 300
Richmond, Virginia 23233**

September 13, 2012



To: Jeremy Shecterle J. P. Cullen & Sons, Inc.
From: Larry Lucas
Re: Sound Reinforcement Recommendation
Date: September 13, 2012

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1.0 GENERAL

Two firms – Daktronics and Pro Media - submitted bids for the Camp Randall Sound Reinforcement Package. Each provided multiple options for consideration. The purpose of this document is to provide an overview of the bids and an objective evaluation of the best options.

2.0 AUDIO BID MATRIX

AUDIO BID MATRIX				
VENDOR	MANUFACTURER	DESCRIPTION	COST	OVER/UNDER
AJP	SPEC	BUDGET	\$1,100,000.00	
Pro Media Ultrasound	JBL	JBL loudspeaker solution	\$1,087,997.00	(\$12,003)
Pro Media Ultrasound	MEYER (MILO)	Meyer Sound MILO Line Arrays (does not meet performance spec's)	NOT RECOMMENDED	
Pro Media Ultrasound	MEYER (LEO)	Meyer Sound LEO Line Arrays	\$1,364,830.77	\$264,830.77
Daktronics	JBL	JBL Loudspeaker Design	\$1,019,872.00	(\$80,128)
Daktronics	JBL	JBL loudspeakers with Danley Sound Labs subwoofers	\$1,101,177.00	(\$1,177)
Daktronics	RENKUS HEINZ	Renkus Heinz – Horizontal Design	\$872,052.00	(\$227,948)

3.0 BID REVIEW

AJP has worked closely with both of these integrators and would recommend either for this project. They are both industry leaders in regards to sound reinforcement installations in outdoor sports venues. The decision for award should be based on the desired speaker system and which design to use. All designs presented, with the exception the Renkus Heinz design, may be used in a vertical or horizontal configuration. Renkus Heinz is only horizontal.



DAKTRONICS

Daktronics has offered a JBL designed system as their base bid and have offered an alternative design with Danley sub-woofers to supplement the JBL system. They have also provided a lower end alternate system with Renkus-Heinz speakers. This will net a savings of about \$150K off their base bid. We would not recommend this system as it will not meet the expectations of the University of Wisconsin. While the product meets the performance specifications, the tonality and pattern control will not provide the even coverage and pattern control that is desired.

PRO MEDIA

Pro Media has also bid a JBL system as well as two Meyer Sound designs. The Meyer Milo line array design simply does not meet the performance specifications and is not in consideration. Their JBL design is not as robust as the Daktronics JBL/Danley offering and is priced essentially the same. We would only consider their Meyer Leo offering.

JBL

JBL is considered by many to be the industry standard large venues such as Camp Randall. We believe any of the three JBL designs presented would meet performance specs and our recommendation would be the Daktronics design with the Danley sub-woofers. The advantages provided by the Danley subwoofers are:

- More directivity due to port placement
- Tighter low end and lower frequency response
- More power efficient relative to output

MEYERS

The Meyer Leo line array product that Pro Media has offered is a high end, high output product that caters to the touring market. Pro Media is one of the few authorized installers of this product. This product was recently installed in Ohio Stadium and debuted two weeks ago to great reviews.

The advantages of this system are:

- A common problem with venues the size of Camp Randall Stadium is the ability to throw high frequencies over long distance due to air absorption. The Meyer SB-1 loudspeaker that has been offered is a satellite-type speaker specifically designed to throw high frequencies to the other end of the stadium providing greater intelligibility in the South End Zone seating area.
- The speakers have a very tight coverage pattern that will help reduce the amount of energy that is reflected off hard flat surfaces such as the Field House and the Suites. This will reduce the late arrivals (perceived as echoes) throughout the rest of the stadium.
- The tighter pattern control will also reduce the amount of energy relative to the amount produced from spilling out of the bowl and into the surrounding neighborhoods.



4.0 RECOMMENDATION

The University has two good options to choose from with a significant difference in price. AJP believe the advantages that the Meyer system offers is worthy of the price differential. Amortized over ten years the price difference is just \$26K/year.

If the desire is to stay within the original budget, then the Daktronics designed JBL system at \$1.1M would be our recommendation.

We do believe there is fine tuning required with either of the options. Further discussions with the preferred bidder will be necessary to finalize the design and price before the University commits to a final design.