

Acentech

First Congregational Church Bristol, RI



PRELIMINARY AUDIOVISUAL SYSTEM PROGRAM REPORT

Acentech Job No. 621684
January 3, 2012

Prepared for:
Heritage Restoration

Prepared by:
Acentech Incorporated
33 Moulton Street
Cambridge, MA 02138
617-499-8000

TABLE OF CONTENTS

BUDGET SUMMARY	1
SANCTUARY	3
DEWOLF ROOM	6
DIAMOND ROOM	9
HISTORICAL ROOM.....	11
ARCHITECTURAL CONSIDERATIONS	13

BUDGET SUMMARY

1.0 **GENERAL:**

The First Congregational Church is undergoing renovations and representatives of the Congregation have expressed interest in performing upgrades to the Church's audiovisual capabilities, including the installation of a replacement sound system in the Sanctuary.

This program report describes the audiovisual systems for the Sanctuary, DeWolf Room, Historical Room, and Diamond Room, defines the audiovisual system technologies utilized for the different spaces, and presents a budget for the systems. The intent of the program report is to assist in calculating general costs for audiovisual system equipment. The client is expected to review this document for conformity to user needs. It must also be compiled with other related budgets such as network data distribution, furniture, millwork, electrical, and mechanical systems to provide a complete picture of the associated costs.

This report is based on our programming meeting on December 13, 2011 with Robert Cagnetta of Heritage Restoration and representatives from the First Congregational Church, a review of our existing sound system evaluation report, experience on similar projects, and industry standards reflecting generally accepted design criteria.

1.1 **COST ESTIMATE SUMMARY:**

A. Sanctuary	\$138,700
B. DeWolf Room	\$68,800
C. Diamond Room	\$39,900
D. Historical Room	\$14,000

Note: Refer to individual sections below for detailed cost estimate breakdowns.

1.2 **BUDGET NOTES:**

- A. The installed cost of the audiovisual system is approximate, assumes the use of new equipment installed professionally by a qualified audiovisual system contractor, is provided with as-built documentation, and includes a one-year warranty covering parts and labor.
- B. The estimates assume that the labor costs are 45% greater than the total of equipment list prices. This figure accounts for equipment normally sold at some discount from list price and incorporates the costs associated with travel, installation, documentation, training and on-site maintenance for one year. Installation cost is typically the greatest variable and is heavily dependent on factors such as site conditions, divisions of work between audiovisual system and other contractors, local market conditions and requirements for union labor.
- C. The estimates do not include costs for requirements such as electrical power, conduit, lighting fixtures, casework or any special architectural requirements. Technical administration and staffing, as well as vendor-supplied service and maintenance beyond the initial one-year parts and installation warranty, are not included in this estimate.
- D. The pricing represents the major divisions of equipment types required to meet the audiovisual system requirements identified at this time. The equipment lists have been prepared for budgeting purposes only and reflect a general level of systems design. The presence or absence of any items should not be assumed definitive.
- E. The estimate includes installation and labor, but does not include the cost of taxes, General or Electrical Contractor markups, conduit or electrical power for the systems, millwork, or any special architectural requirements.
- F. The pricing must be compiled with other related budgets such as network data distribution, furniture, millwork, electrical, and mechanical systems to provide a complete picture of the associated costs.

SANCTUARY

2.0 DESCRIPTION

The Sanctuary in the First Congregational Church is a large space comprising approximately 5,000 square feet. The space is used primarily for religious services that include speech, live musical performance, and some pre-recorded music playback.

2.1 AUDIOVISUAL SYSTEM

The audiovisual system in the Sanctuary will consist of a sound system for speech reinforcement, some music reinforcement, and program audio playback. It will include inputs for wired microphones, two wireless microphones, an automatic microphone mixer, a manually-controlled digital mixing console, and associated processing and amplifiers.

Two column-style directional loudspeakers will be located on either side of the Altar and will be used as the primary source for speech reinforcement and playback of audio. Approximately four additional loudspeakers will be provided in the upper balconies and approximately two additional loudspeakers on the main floor towards the rear seating areas will be provided to support the two primary loudspeakers at the Altar. The overall loudspeaker system will provide uniform audio coverage through the audience seating area; allowing the system to provide high levels of speech intelligibility and musical clarity.

The sound system will consist of two microphone mixing modes; automatic and manual. These modes will be selectable from a wall-mounted control panel.

- Automatic Microphone Mixing Mode: This mode will allow an end-user to simply connect a microphone to the system at one of the designated microphone receptacle locations. Master volume control will be accessible from the control panels. This will be the system's default setting and will be the ideal mode to use for simple speech reinforcement.
- Manual Microphone Mixing Mode: For events when more complex operation of the sound system is required, the automatic microphone-mixing can be bypassed and the system can be run by a trained operator. Volume levels of microphones and other AV sources will be controlled from a 16-channel digital mixing console. The mixing console will be either portable and be placed on a desk at a designated audio mix position, or it will be permanently located at a mixing position within a secure roll-top cabinet/desk (TBD).

Connections for wired microphones and for portable loudspeakers will be located on wall or floor mounted receptacle panels. These will be located on and in front of the Altar, and also at the organist location. Connections for monitor loudspeakers will allow the organist to be able to better hear musicians that are performing at the front of the Sanctuary by connecting a portable powered loudspeaker, as desired.

To comply with the Americans with Disabilities Act (ADA), an assistive listening system will be provided for audience members with hearing impairments. A quantity of belt-packs and receivers will be provided with the audiovisual system as a percentage of the audience capacity.

Audiovisual source devices will consist of an owner-provided computer. This computer will be used to send video content, such as real-time display of song lyrics during musical performances in

Church services, to two 80" LCD display panels. The 80" LCD display panels will be mounted onto motorized lifts installed within the Altar platform. These motorized lifts will allow the display panels to rise out of the Altar when needed, and to retract back into the Altar when not being used. Additional video sources will include two high-definition motorized pan/tilt/zoom cameras (one in the balcony near the front Sanctuary wall, and another on the rear wall). The rear camera will be used to send video to a 32" LCD display panel at the organist position (allowing the organist, who typically faces the rear of the Sanctuary, to better see cues as they occur at the front of the Sanctuary). Finally, audiovisual connections for portable AV source equipment (such as a laptop computer) will be available on a receptacle panel at the audio mix location.

Along with a mixed audio overflow feed that originates from the Sanctuary's sound system processing equipment, video feeds from the cameras will be distributed to the DeWolf Room, Historical Room, and Diamond Room. This will allow occupants of those spaces to be able to watch events occurring in the Sanctuary in real time. These audio and video feeds can also be used for future video archiving, recording, or internet based video streaming systems.

An audiovisual control system will be provided to manage and simplify the operation of the audiovisual equipment. A wall-mounted LCD touch-screen control panel, mounted adjacent to the Altar will include an intuitive and user-friendly graphical user interface (GUI). An additional portable touch-screen control panel will be used at the audio mix location.

The audiovisual control system may operate the following:

1. Powering the AV system on or off.
2. Video display operations (on, off, source select, etc.).
3. Program audio volume level.
4. Microphone audio volume levels.
5. Manual/Automatic Microphone Control mode selection.
6. Control of the retractable display panels.
7. Camera preset selection
8. Room lighting presets (via the lighting dimming system, by others).

The control system will be tied into the local area computer network, so that the audiovisual equipment can be monitored remotely, diagnostics can be run, and the system can be shut down when the room is not occupied using room control software.

An audiovisual equipment rack will be located in an equipment room adjacent to the Sanctuary (exact location TBD). This will house processing, switching, control, and amplification equipment.

2.2 BUDGET

A. Sanctuary AV System Estimate:

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	Wired Microphones	\$1,200
2.	Wireless Microphones	\$3,100
3.	Digital Mixing Console and Accessories	\$2,500
4.	Audio Signal Processing & Distribution	\$2,000
5.	Power Amplifiers	\$5,400
6.	Loudspeakers & Accessories	\$5,700
7.	Assistive Listening System	\$5,200
8.	Equipment Rack and Power	\$2,600
9.	Control System, Touch-Panels, and Accessories	\$7,800
10.	Video Displays, Motorized Mounts, and Accessories	\$20,200
11.	Video Cameras & Accessories	\$10,200
12.	Video Processing, Switching, and Distribution	\$13,100
13.	Connection Panels & Accessories	\$1,400
14.	<u>Miscellaneous Equipment (Cables, Wiring, etc)</u>	<u>\$12,100</u>
	Equipment Total	\$92,500
	Installation & Other Non-Equipment (45%)	\$41,600
	<u>Contingency (5%)</u>	<u>\$4,600</u>
	Total Estimate	\$138,700

B. General Contractor & Miscellaneous Scope Services

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	Conduit & Electrical	By Others

Note: All calculations are rounded to the nearest hundred dollars.

DEWOLF ROOM

3.0 DESCRIPTION

The DeWolf Room is a multipurpose-use space that consists of approximately 1,600 square feet. The space will be used for small religious services, movie nights, live music, and presentations.

3.1 AUDIOVISUAL SYSTEM

The audiovisual system in the DeWolf Room will include a sound system that will be used for speech reinforcement, live music reinforcement, program audio playback during presentations, and surround sound playback during movie events. It will include one wired and two wireless microphones, an automatic microphone mixer, a manually controlled digital mixing console on a portable cart, and associated processing and amplifiers.

The sound system will include portable loudspeakers; allowing for flexible configurations of the space. Five self-powered full-range loudspeakers on tripods and one self-powered subwoofer will be provided. Connections for the portable loudspeakers will be located at six dedicated wall-mounted receptacle panels. Additional connections will be available on the stage platform for portable stage monitor loudspeakers.

The sound system will consist of two microphone mixing modes; automatic and manual. Microphone input connections will be labeled accordingly.

- Automatic microphone inputs will be mixed through the sound system processor and played back through the system's loudspeakers. These microphone inputs will be located at the stage platform area, and on the opposite wall. They will be used for presentations and services, and will allow the users to conduct presentations from either side of the room.
- Manual microphone inputs, which will be located only on the stage platform area, will connect to a receptacle panel located on the opposite side of the room. This receptacle panel will be the dedicated audio mix location, and will allow a user to connect the portable digital mixing console to the system to mix audio for larger presentations or live music performances.

When used for movies, the sound system will use a surround sound processor and playback audio through the five full-range loudspeakers, and subwoofer.

To comply with the Americans with Disabilities Act (ADA), an assistive listening system will be provided for audience members with hearing impairments. A quantity of belt-packs and receivers will be provided with the audiovisual system as a percentage of the audience capacity.

For video display, the system will include a 4,000 ANSI lumen video projector on a portable cart. Images will be displayed on a wall-mounted 90" high x 160" wide motorized projection screen. Audiovisual sources will consist of a Blu-ray player, an owner-provided cable television receiver, and overflow feeds from the Sanctuary. Audiovisual connections for portable AV source equipment (such as a laptop computer) will be available on a receptacle panel on the stage platform.

An audiovisual control system will be provided to manage and simplify the operation of the audiovisual equipment. A wall-mounted LCD touch-screen control panel will include an intuitive and user-friendly graphical user interface (GUI).

The audiovisual control system may operate the following:

1. Powering the AV system on or off.
2. Sound system mode (movie, stage platform presentation, rear wall presentation)
3. Video display operations (on, off, source select, etc.).
4. Projection screen (up/down/stop).
5. Program audio volume level.
6. Microphone audio volume levels.
7. AV source selection.
8. Room lighting presets (via the lighting dimming system, by others).

The control system will be tied into the local area computer network, so that the audiovisual equipment can be monitored remotely, diagnostics can be run, and the system can be shut down when the room is not occupied using room control software.

Audiovisual equipment will share space in the Sanctuary AV equipment rack. Additionally, the DeWolf Room audiovisual system will share equipment with some of the equipment being used in the Sanctuary (such as audio processing, control processing, and video distribution equipment). *Because of this, it is important to recognize that the estimated pricing provided cannot be used for a stand-alone system.*

It should also be noted that the portable loudspeakers used in this system can be used for other purposes such as for supporting music playback in the Sanctuary, and also for outdoor Sunrise Services. The loudspeakers are not weatherproof, and these types of loudspeakers should not be directly exposed to rain. However, the loudspeakers are rugged and can be used during inclement weather as long as they are covered properly.

3.2 BUDGET:

A. DeWolf Room AV System Estimate:

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	Wired Microphones	\$300
2.	Wireless Microphones	\$2,100
3.	AV Sources (Blu-ray Player, etc.)	\$300
4.	Digital Mixing Console and Portable Cart	\$3,300
5.	Audio Signal Processing, Surround Processing & Distrib	\$4,600
6.	Power Amplifiers	\$1,200
7.	Loudspeakers & Accessories	\$7,200
8.	Assistive Listening System	\$1,800
9.	Control System, Touch-Panels, and Accessories	\$2,400
10.	Video Projector, Cart, and Accessories	\$6,100
11.	Motorized Video Projection Screen	\$3,400
12.	Video Processing, Switching, and Distribution	\$5,300
13.	Connection Panels & Accessories	\$1,900
14.	<u>Miscellaneous Equipment (Cables, Wiring, etc)</u>	<u>\$6,000</u>
	Equipment Total	\$45,900
	Installation & Other Non-Equipment (45%)	\$20,600
	<u>Contingency (5%)</u>	<u>\$2,300</u>
	Total Estimate	\$68,800

B. General Contractor & Miscellaneous Scope Services

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	Conduit & Electrical	By Others

Note: All calculations are rounded to the nearest hundred dollars.

DIAMOND ROOM

4.0 **DESCRIPTION:**

The Diamond Room is a space consisting of approximately 1,450 square feet that is used for music rehearsals and classroom functions.

The audiovisual presentation system will include a ceiling-mounted high-brightness video projector. Images will be displayed on a wall-mounted 54" high x 96" wide motorized projection screen.

Audiovisual sources will consist of a Blu-ray player, an owner-provided cable television receiver, and overflow feeds from the Sanctuary. Audiovisual connections for portable AV source equipment (such as a laptop computer) will be available on wall-mounted receptacle panels at the front and rear of the room.

For AV program audio (such as audio feeds from the computer or Blu-ray player), playback will occur via two wall-mounted loudspeakers located on either side of the projection screens.

To comply with the Americans with Disabilities Act (ADA), an assistive listening system will be provided for audience members with hearing impairments. A quantity of belt-packs and receivers will be provided with the audiovisual system as a percentage of the audience capacity.

An audiovisual control system will be provided to manage and simplify the operation of the audiovisual equipment. A wall-mounted LCD touch-screen control panel, mounted adjacent to the projection screen, will include an intuitive and user-friendly graphical user interface (GUI). The control system will be tied into the local area computer network, so that the audiovisual equipment can be monitored remotely, diagnostics can be run, and the system can be shut down when the room is not occupied using room control software.

The audiovisual control system may operate the following:

1. Powering the AV system on or off.
2. Video display operations (on, off, source select, etc.).
3. AV source selection (Blu-ray player, cable television receiver, Sanctuary feed, etc.)
4. Program audio volume level.
5. Room lighting presets (via the lighting dimming system, by others).

All AV system processing, switching, and control equipment will be installed in an equipment rack (or racks, as required) within an AV equipment closet (location TBD).

4.1 BUDGET:

A. Diamond Room AV System Estimate:

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	AV Sources	\$300
2.	Power Amplifiers	\$700
3.	Loudspeakers & Accessories	\$500
4.	Assistive Listening System	\$1,400
5.	Equipment Rack and Power	\$1,800
6.	Control System Touch-Panel	\$2,400
7.	Video Projector, Mount, and Accessories	\$3,500
8.	Motorized Video Projection Screen	\$2,400
9.	AV Processing, Switching, and System Control	\$9,700
10.	Connection Panels & Accessories	\$500
11.	<u>Miscellaneous Equipment (Cables, Wiring, etc)</u>	<u>\$3,500</u>
	Equipment Total	\$26,700
	Installation & Other Non-Equipment (45%)	\$11,900
	<u>Contingency (5%)</u>	<u>\$1,300</u>
	Total Estimate	\$39,900

B. General Contractor & Miscellaneous Scope Services

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	Conduit & Electrical	By Others

Note: All calculations are rounded to the nearest hundred dollars.

HISTORICAL ROOM

5.0 DESCRIPTION:

The Historical Room is a small space consisting of approximately 300 square feet that will be used as an overflow seating area during religious services taking place in the Sanctuary (a “Cry Room”).

The audiovisual presentation system will have a wall-mounted LCD display panel and ceiling-mounted loudspeakers. The system will share AV sources with the rack-mounted source devices being used in the DeWolf room, and will also display video originating from the motorized cameras in the Sanctuary. Audio playback will occur through two ceiling-mounted loudspeakers.

To comply with the Americans with Disabilities Act (ADA), an assistive listening system will be provided for audience members with hearing impairments. A quantity of belt-packs and receivers will be provided with the audiovisual system as a percentage of the audience capacity.

A wall-mounted LCD touch-screen control panel will include an intuitive and user-friendly graphical user interface (GUI).

The audiovisual control system may operate the following:

1. Powering the AV system on or off.
2. Video display operations (on, off, source select, etc.).
3. AV source selection (Blu-ray player, cable television receiver, etc.)
4. Program audio volume level.

Audiovisual system components used for the Diamond Room will share equipment with some of the equipment being used in the Sanctuary and DeWolf Room (such as audio processing, control processing, and video distribution equipment).

5.1 BUDGET:

A. Historical Room AV System Estimate:

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	Power Amplifiers	\$200
2.	Loudspeakers & Accessories	\$200
3.	Assistive Listening System	\$1,000
4.	Control System Touch-Panel	\$1,300
5.	LCD Display, Mount, and accessories	\$4,300
6.	AV Processing & Distribution	\$900
7.	Connection Panels & Accessories	\$200
8.	<u>Miscellaneous Equipment (Cables, Wiring, etc)</u>	<u>\$1,200</u>
	Equipment Total	\$9,300
	Installation & Other Non-Equipment (45%)	\$4,200
	<u>Contingency (5%)</u>	<u>\$500</u>
	Total Estimate	\$14,000

B. General Contractor & Miscellaneous Scope Services

<u>Item</u>	<u>Description</u>	<u>Cost</u>
1.	Conduit & Electrical	By Others

Note: All calculations are rounded to the nearest hundred dollars.

ARCHITECTURAL CONSIDERATIONS

6.0 COORDINATION ITEMS:

The following items should be considered for proper coordination between sound system components and other trades. We will be available to design the AV system and work with you to ensure that these items are properly coordinated:

- A. Loudspeakers:
 - 1. Loudspeaker coverage patterns must not be obstructed.
- B. Equipment Rack Locations:
 - 1. Proper ventilation will be required to maintain proper cooling of sensitive AV system equipment.
- C. Connection Panel Locations:
 - 1. Connection panel locations will require further coordination with the electrical engineer and General Contractor.
- D. Wall-Mounted Antennas:
 - 1. Antennas for the assistive listening system will be wall-mounted.
- E. Floor Box/Poke-Through and/or Wall-Mounted Connection Panel Locations:
 - 1. Floor-box and wall-mounted Connection panel locations will require further coordination with the electrical engineer and General Contractor
- F. Millwork:
 - 1. AV system equipment mounted within podiums, credenzas, and other millwork will require proper coordination with the General Contractor.
- G. AC Power and Grounding Notes:
 - 1. Electrical Contractor (EC) provides conduit system and AC power for the AV system. AV system contractor pulls and terminates all audiovisual system cables.
 - 2. AC power to the audiovisual system components must be fed from a common AC panel with a cleanup transformer and transient-voltage surge suppression. Use an isolated ground with separate neutrals in each of the panels. Panel ground must connect to the main panel or service entrance ground.
 - 3. Circuits will be required at all equipment racks, connection panels (wall panels, floor boxes, etc.), control rooms, and control locations.
- H. Telecommunications:
 - 1. Telecommunications Contractor (TC) provides data drops for AV system.