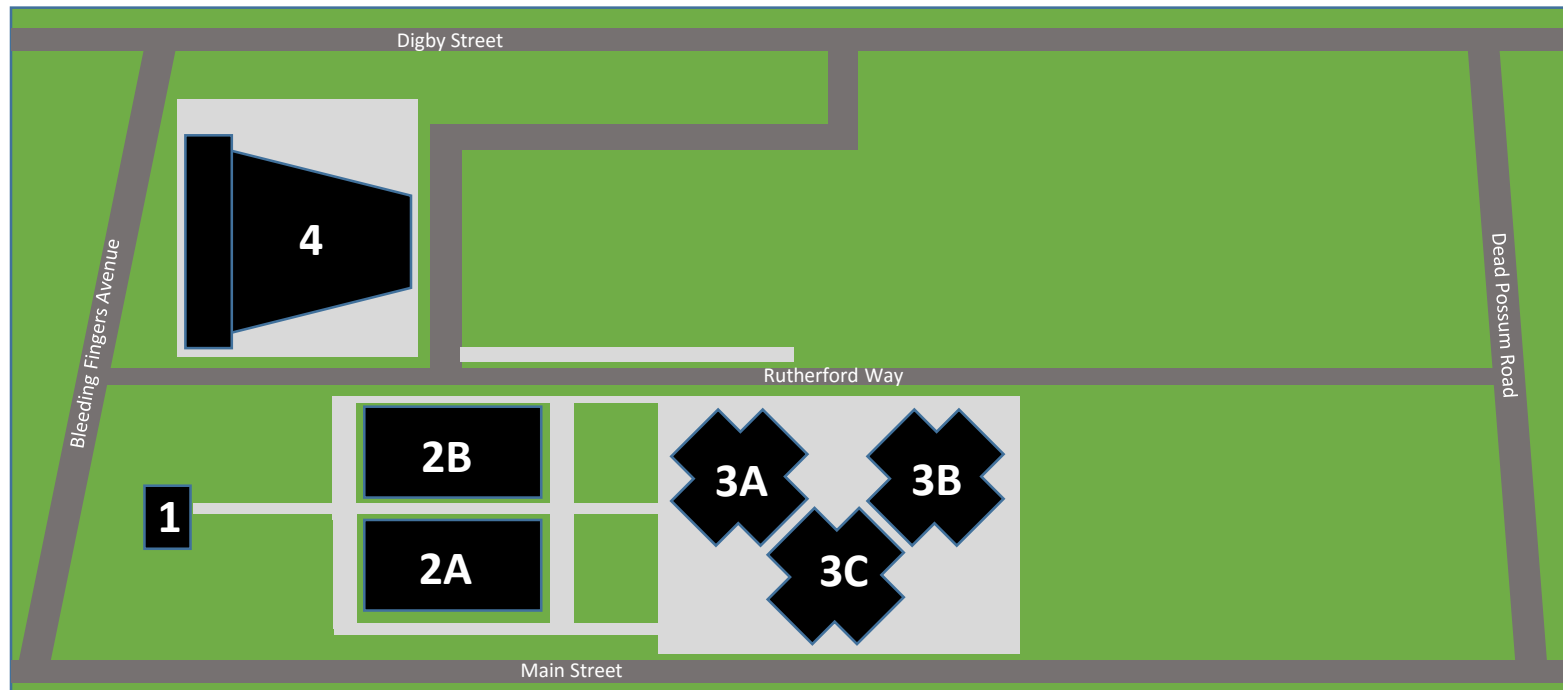


System Design Session #2

A Case Study of the Audio Systems at
Sir Digby Rutherford's School for Wayward Musicians

Campus Overview

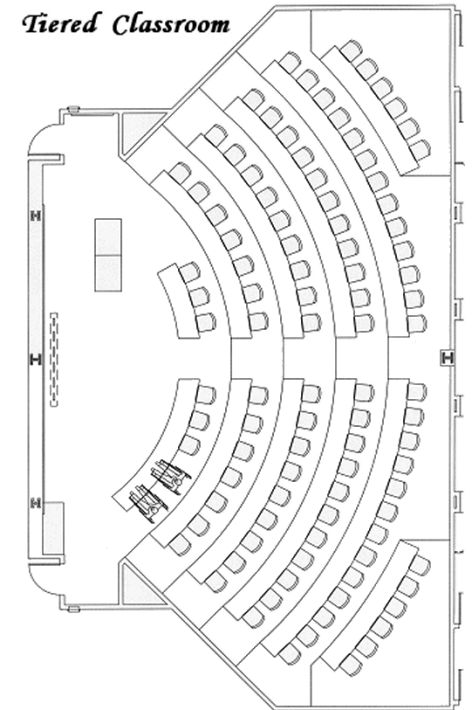
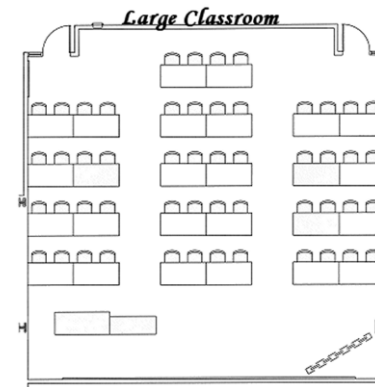
Like many fine institutions, the school quickly grew and now consists of the following buildings:



- 1 – Lecture Hall (Original Building)**
- 2 – Education Center (Classrooms)**
- 3 – Student Center & Housing**
- 4 – Performing Arts Center**

Education Center- Project Description

- Renovation of two existing buildings (North & South)
 - The North EC will have ten 45-seat flat-floor classrooms and four 60 flat-floor classrooms.
 - The South EC will have five 120-seat tiered classrooms and two 200-seat tiered classrooms.
 - A Technical Operations Center and A/V help desk will be located in the South EC building.
- In every classroom the A/V system will have:
 - A/V enabled Instructor's Desk
 - Speech & Sound reinforcement system
 - Playback of program audio
 - Conferencing & Recording capability
 - Room Combining abilities

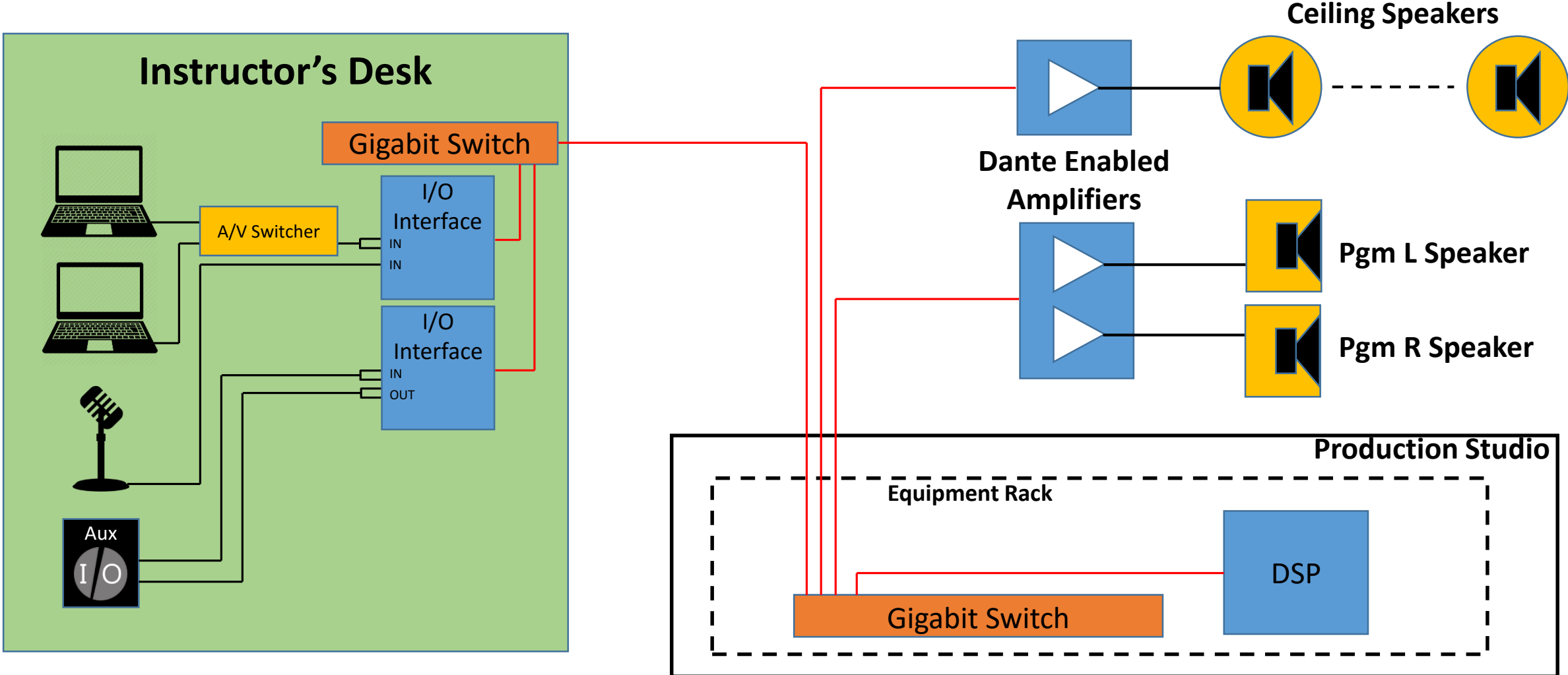


Education Center - System Components

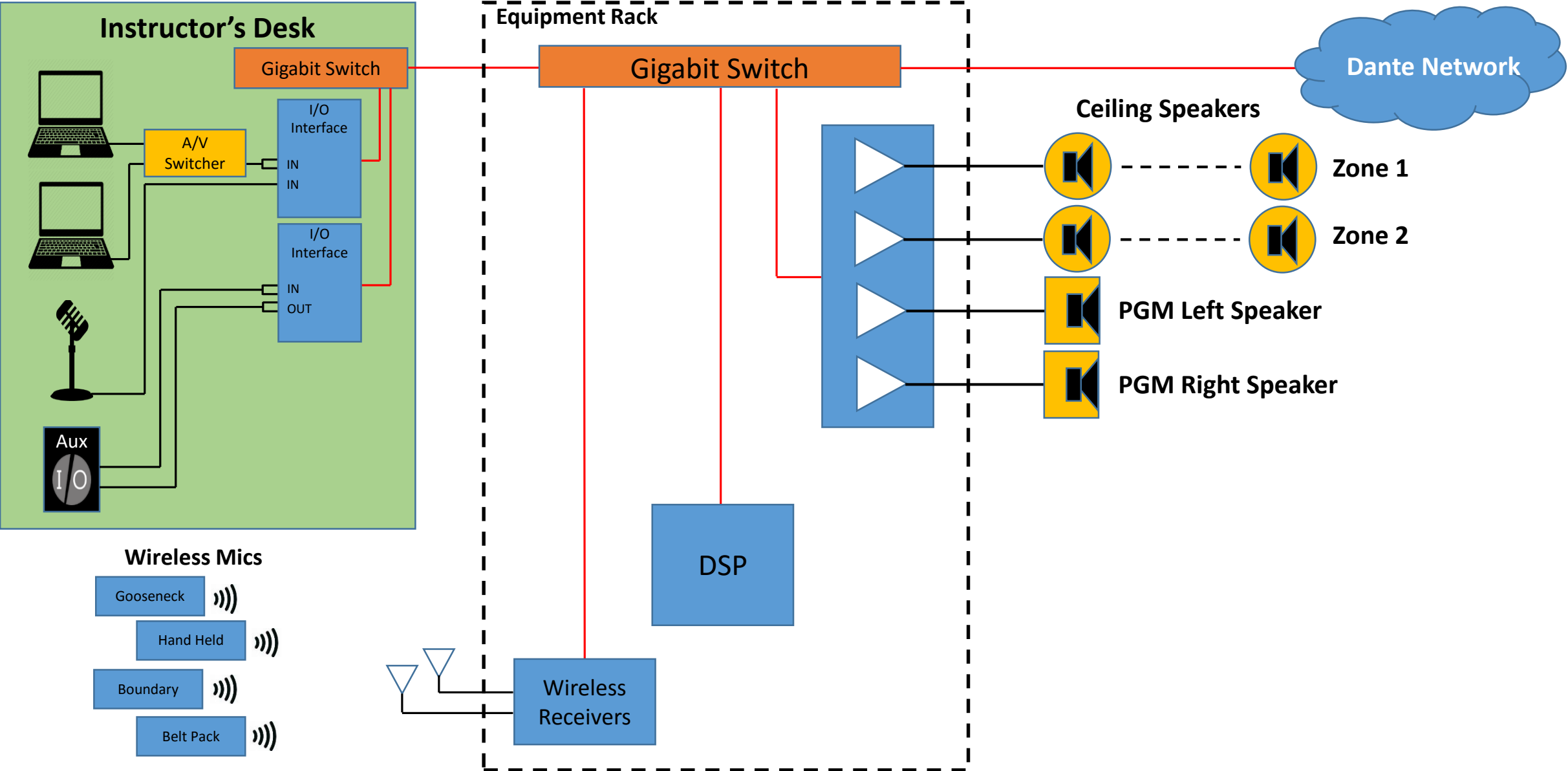
- Every Classroom audio system will require:
 - Instructor station with A/V connectivity for:
 - 2 computers
 - Auxiliary audio I/O (stereo)
 - Lectern Mic
 - Wireless Mic
 - Belt pack transmitter with lavalier mic (for recording & sound reinforcement)
 - Power amplifiers
 - Loudspeakers
 - And the remaining gear needed:
 - Student microphones (wireless and/or wired)
 - Ceiling speakers (multiple zones for mix-minus, where needed)
 - Power amplifiers
 - Digital Signal Processor w/Acoustic Echo Cancellation

EC Type 1 Classroom – Block Diagram:

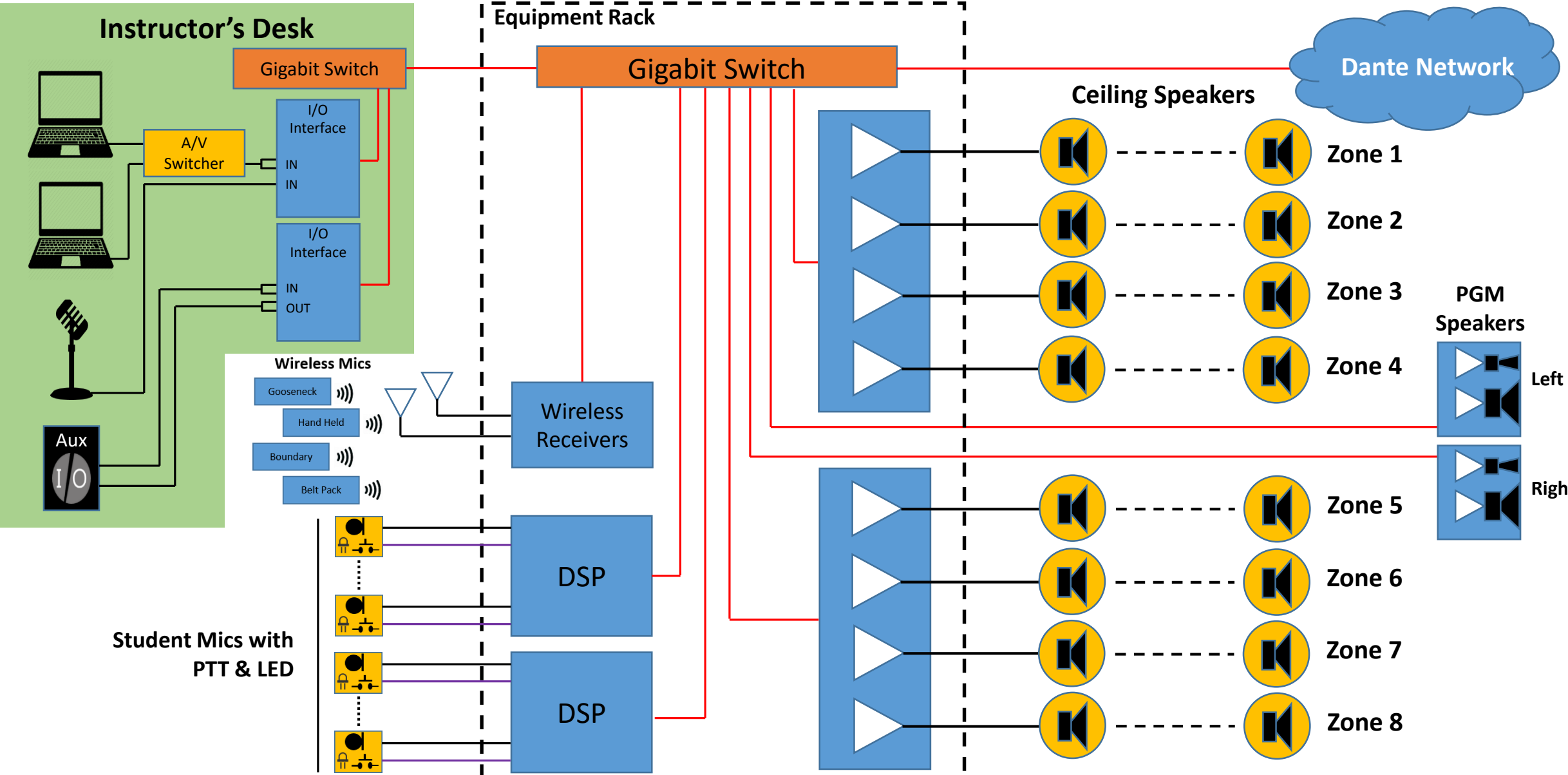
- Simple block diagram of system:



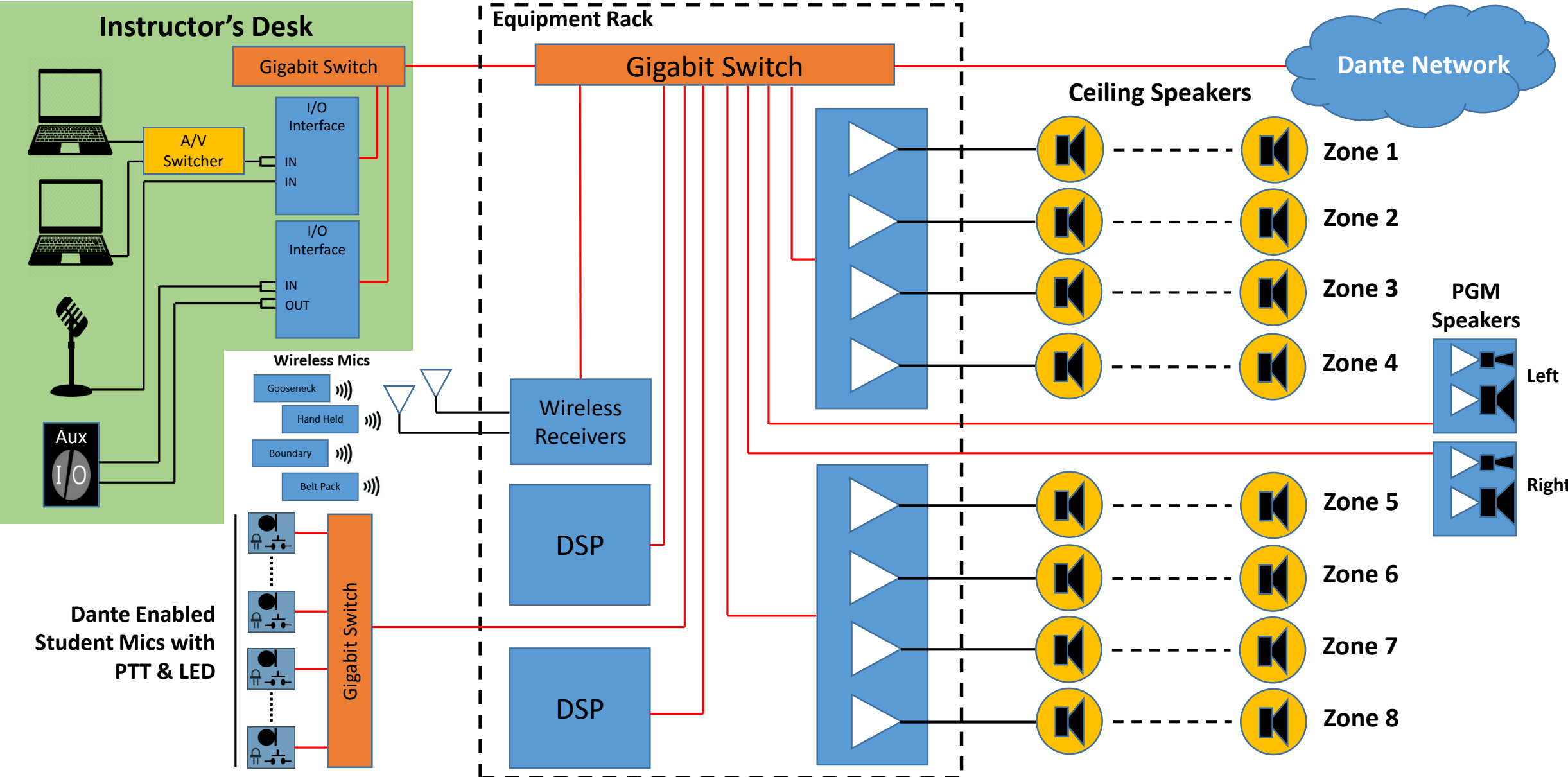
EC Type 1 Classroom – Block Diagram:



EC Type 2 Classroom – Block Diagram:



EC Type 2 Classroom – Block Diagram:



Classroom System – Dante Devices

- There are many Dante I/O devices available to choose for this type of application, including:

Atterotech



RDL



Stewart Audio



Classroom System – Dante Devices

- Here are some of the DSP products available to use in designs such as this:

ClearOne



Lectrosonics



Symetrix



Xilica



Extron



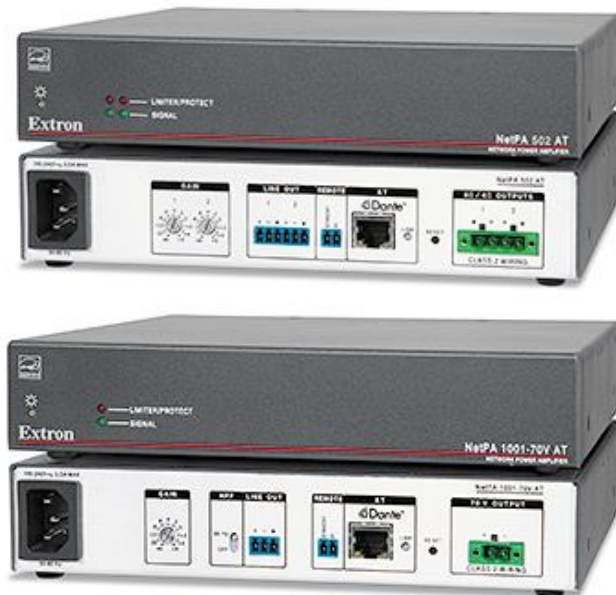
Yamaha



Classroom System – Dante Devices

- And here are some of the Dante enabled power amplifiers that could be used in this application:

Extron



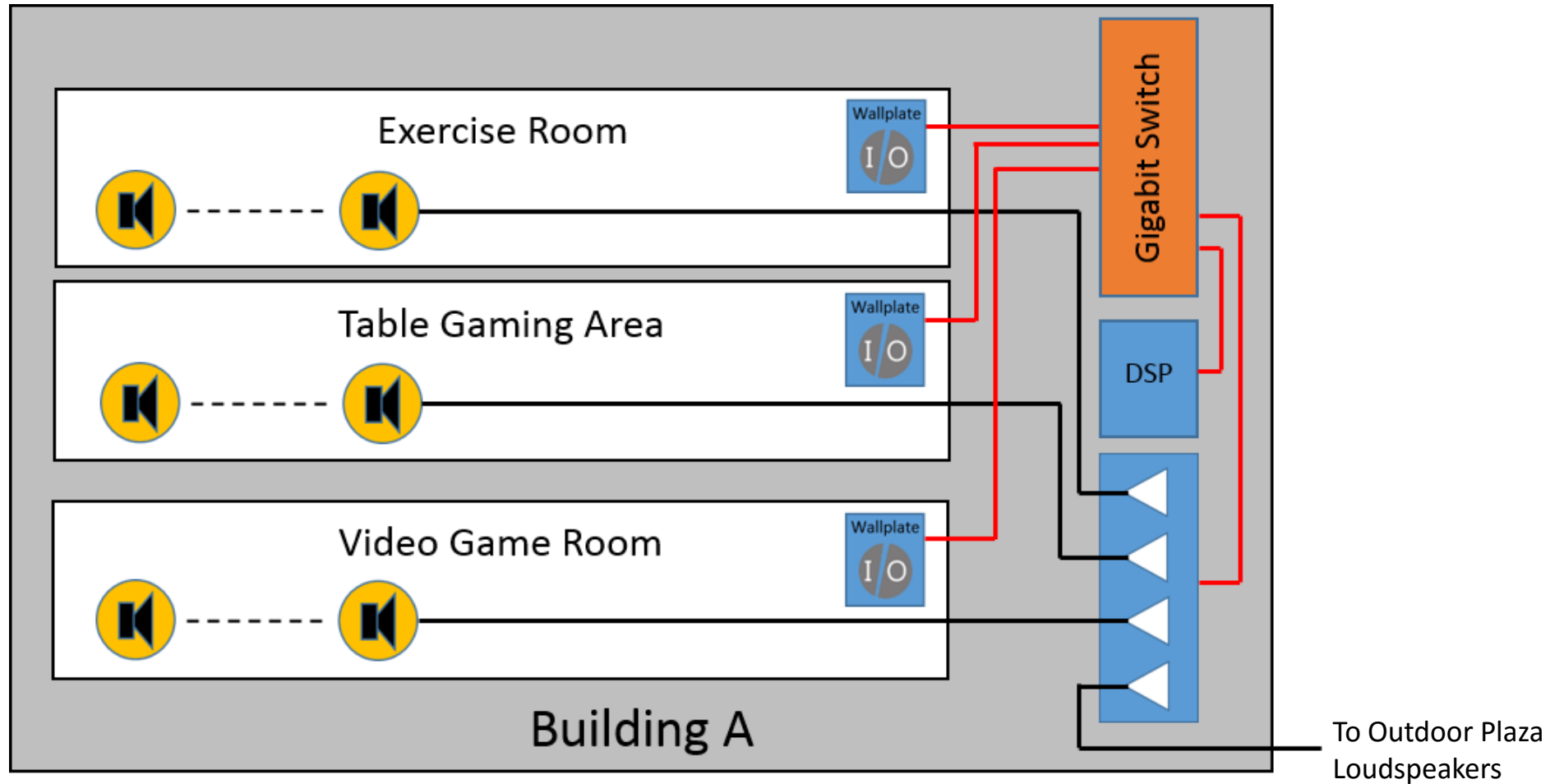
Stewart Audio

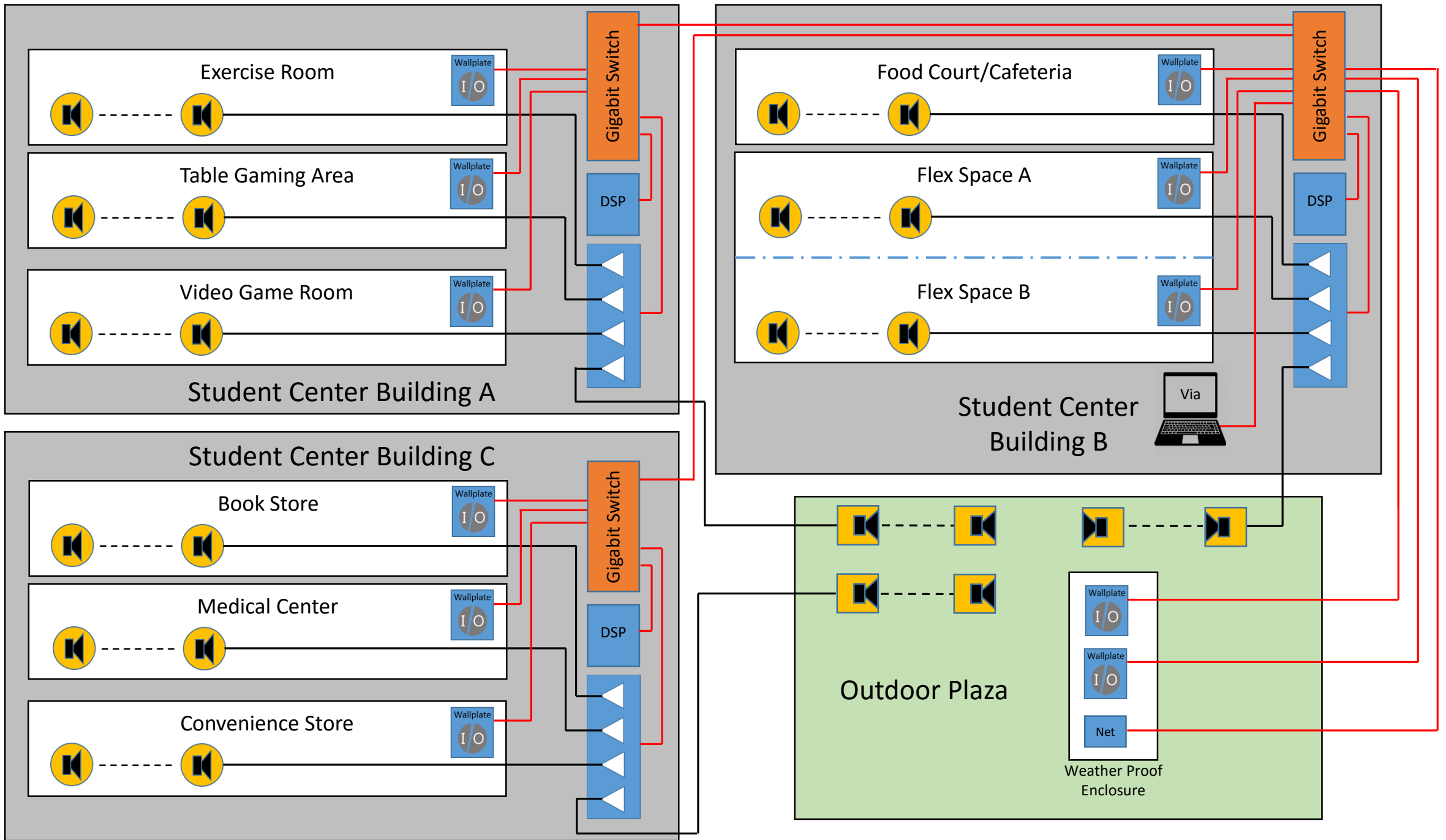


Student Center - Project Description

- Brand new construction of three buildings
 - Building A contains the recreation center with several rooms dedicated for exercise, pool tables, ping-pong, and vintage video games.
 - Building B has a food court/cafeteria, and some flexible space for gatherings to watch movies, presentations, and live performances.
 - Building C houses the campus book store, medical center, and convenience store.
 - The outdoor plaza between the buildings is used for special events several times a year.
 - Each building will have a central audio equipment location.
- Audio System requirements:
 - Each space described above will operate independently (as a stand alone system) for a majority of the time.
 - A centralized background music system with multiple music sources.
 - Input connectivity for local audio sources (mic & line level) for each system.
 - Zone paging capability for the rooms in each building.
 - The ability to combine the spaces together for special events.

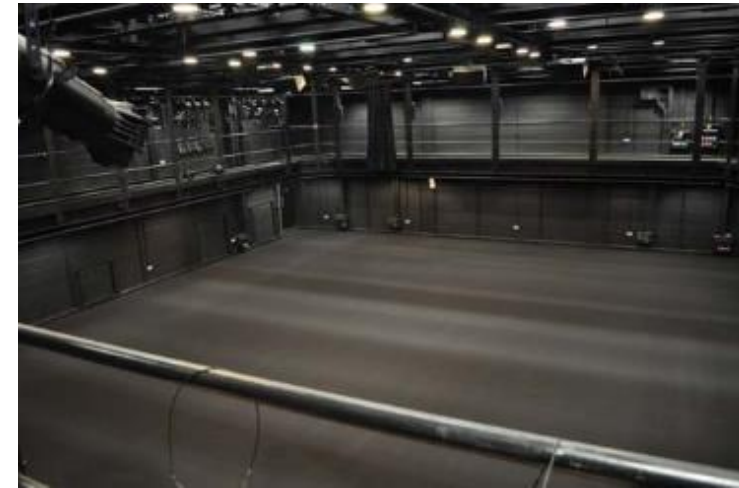
Student Center – Block Diagram, Bldg. A





Performing Arts Center - Project Description

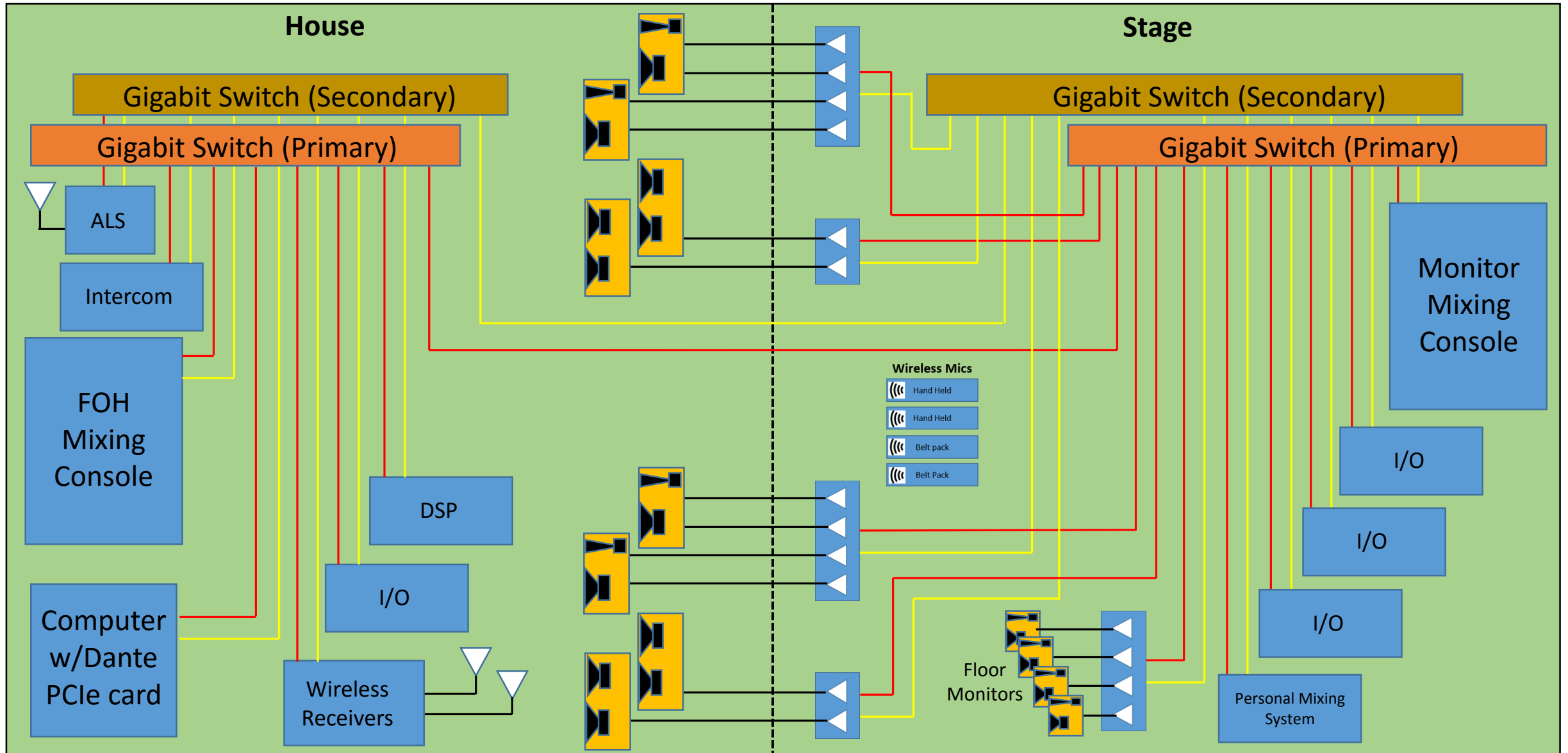
- Brand new construction.
 - It contains a 1,200 seat auditorium
 - And a Black Box Theater



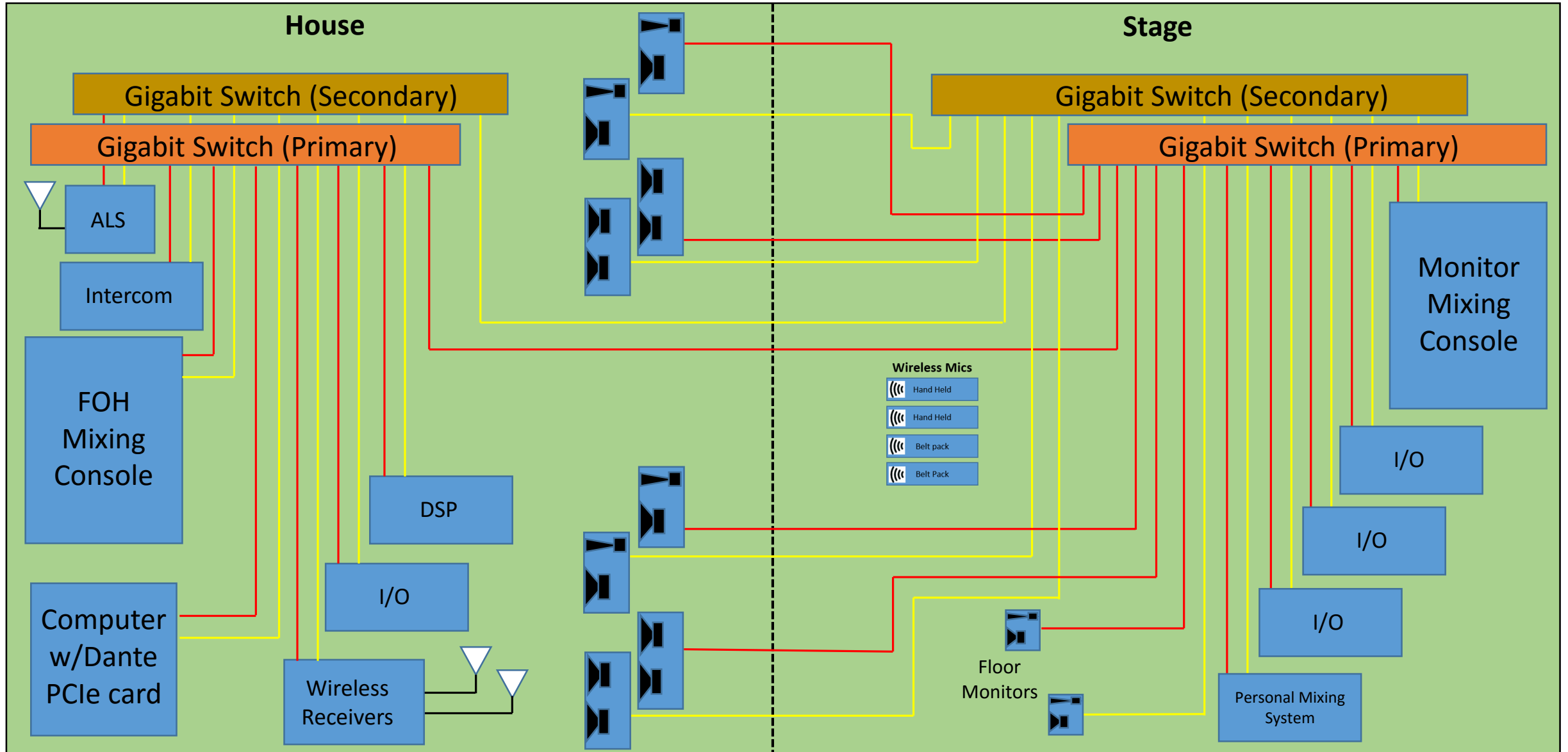
Auditorium - System Components

- The system is designed to handle both theatrical and live music shows, and will include the following:
 - Front of House Mixing Console
 - Monitor Mixing Console
 - Portable Stage boxes (I/O, mic & line level)
 - Audio I/O in floor box enclosures and wall mounted plates. (mic & line level)
 - DSP
 - Power Amplifiers and/or powered loudspeakers
 - Loudspeakers (mains, monitors, ancillary areas)
 - Personal mixing system
 - Wireless microphone system
 - Wired microphones
 - Intercom System

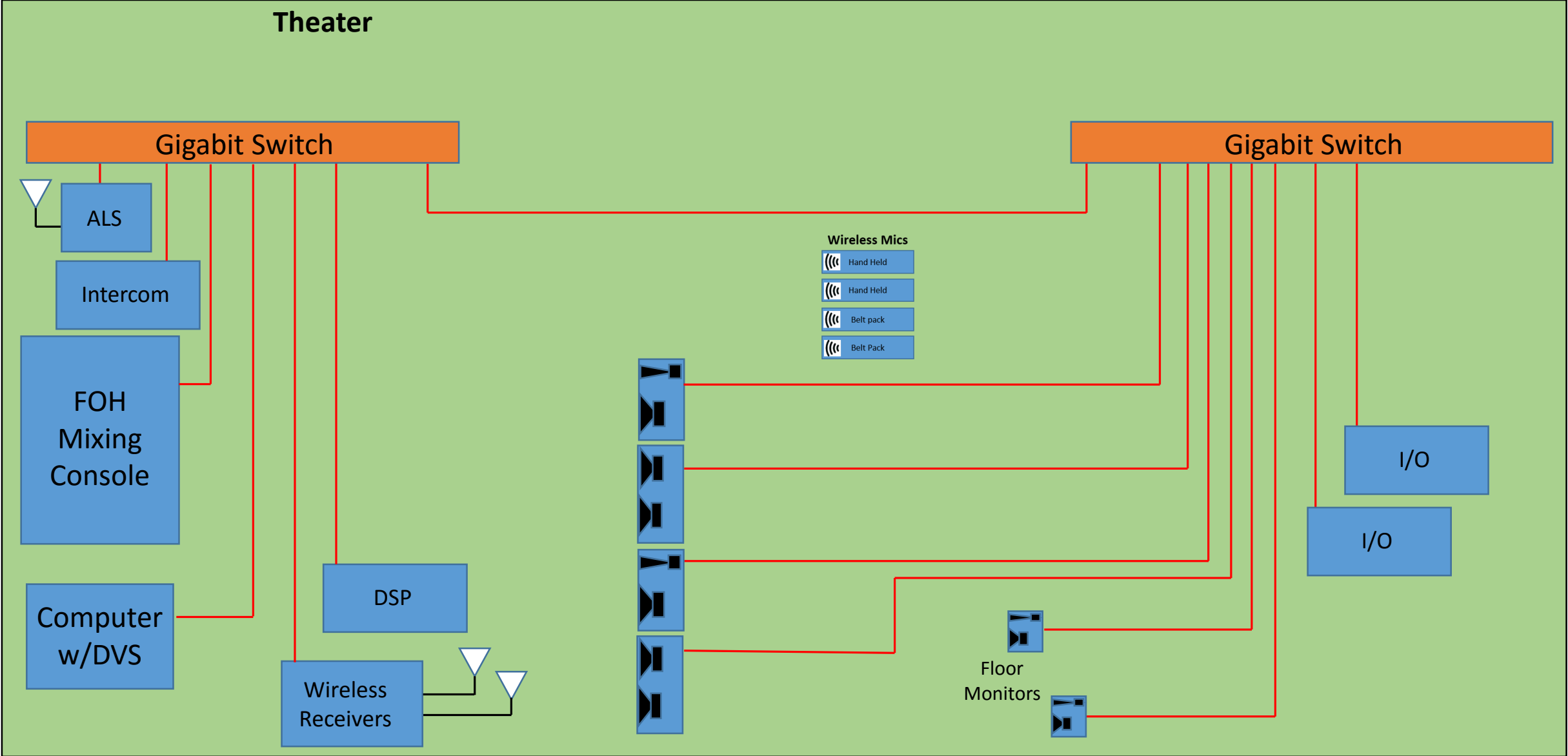
Auditorium – Block Diagram:



Auditorium – Block Diagram:



Black Box Theater – Block Diagram:



PAC, Ancillary Areas – Block Diagram:

