

Breakout Rooms (small up to 600 sqft)

Minimum

- Accommodates portable AV technologies
- Wired HSIA wall connections & wireless HSIA
- Power outlets & phone connections on all walls
- If windows, provide blackout capabilities

Medium

- Floor access for power and data tie lines
- Manual or electrical drop down projection screen
- Dimmers for lighting, plus zone control (to avoid washout)
- Tie Lines to central control (data/digital video grade)
- Electronic auditable lock on door

High

- Ceiling mounted projector (minimum 2,000 lumens) w/remote input at front of room
- Built-in flat-panel LCD display w/remote input
- Built-sound systems (wall and ceiling)
- Digital, programmable control system w/in-room control panel

**Breakout Rooms, Smaller Meeting Rooms, and Boardrooms
with flexible furniture (600 sqft to 1,000)**

Minimum

Accommodates portable AV technologies
Wired HSIA wall connections & wireless HSIA
Power outlets & phone connections on all walls
If windows, provide blackout capabilities
Manual or electrical drop down projection screen
Dimmers for lighting, plus zone control (to avoid washout)
Tie Lines to central control (data/digital video grade)

Medium

Floor access for power and data tie lines
Electronic auditable lock on door
Built-in voice sound systems (ceiling array)
Ceiling mounted projector (minimum 2,000 lumens) w/remote input
at front of room

High

Digital, programmable control system w/in-room control panel
Sound system point source speakers built-in at main display/screen
Video teleconferencing (portable or built-in)
Multiple inputs to projector
Flexible feature lighting

Boardrooms (fixed table, high-finish and/or high-tech)

Minimum

Portable AV technologies
Wired HSIA wall connections & wireless HSIA
Power outlets and phone connections on all walls
Built-in telephone hybrid
Programmable lighting control w/in-room control panel
Tie Lines to central control (data/digital video grade)
Electronic auditable lock on door
Built-in voice sound systems (ceiling array)
Upgraded flexible feature lighting
Multiple AV input/output plates around room and in table
Acoustical treatment to reduce reverberation & eliminate echo (reverberation less than 0.8 seconds)
Lowest level background noise (NC25)
Digital control system w/DSP sound processing
Electrical drop down screen(s)
Built-in visual display with ceiling-mount projector (minimum 2,000 lumens) and electrically retractable front projection screen w/remote inputs at front and rear of room
Sound system point source speakers built-in at main display/screen
Wireless assisted listening system (RF or IR)
Floor access for power and data tie lines

Medium

- Rear projection display built-in (minimum 2,000 lumens)
- Interactive computer display w/internet access built-in
- Built-in or removable microphones in table with microphone management system
- Ceiling microphones for recording
- Video Teleconferencing built-in w/robotic video cameras
- Webcast, simulcast, digital events
- Interactive lectern
- Multiple inputs to projector
- Portable control panel (wired or wireless)

High

- Surround sound for program
- Multi-screen High definition video display
- Built-in delegate microphones with voting
- Mix-minus, “hot room”

Meeting Rooms (independent, 1,000 to 2,000, fixed walls)

Minimum

- Accommodates portable AV technologies
- Wired HSIA wall connections & wireless HSIA
- Power outlets & phone connections on all walls
- If windows, provide blackout capabilities
- Electrical drop down projection screen
- Dimmers for lighting, plus zone control (to avoid washout)
- Tie Lines to central control (data/digital video grade)
- Electronic auditable lock on door
- Built-in voice sound systems (ceiling array)
- Flexible feature lighting
- Multiple AV input/output connections around room

Medium

- Digital, programmable control system w/in-room control panel
- Programmable lighting control w/in-room control panel
- Ceiling mount projector (minimum 3,000 lumens) w/remote input at front of room
- Sound system point source speakers built-in at main display/screen
- Multiple inputs to projector
- Floor access for power and data tie lines
- Acoustical treatment to reduce reverberation & echoes on both fixed walls and operable partitions

High

Video Teleconferencing (portable or built-in)

Retractable feature lighting fixtures w/tech power and tie lines

Interactive computer display w/internet access built-in

Web camera, built-in monitoring from central control room

High definition projection built-in

Built in ceiling microphone(s) for room monitoring & recording

HotRoom or mix-minus sound system

Increased AV input/output connections

Portable control panel (wired or wireless)

Built-in telephone hybrid

Meeting Rooms (combinable or 2,000+ sqft)

May be defined as classrooms, meeting rooms, training rooms, etc.

Minimum

- Accommodates portable AV technologies
- Wired HSIA wall connections & wireless HSIA
- Power outlets & phone connections on all walls
- If windows, provide blackout capabilities
- Electrical drop down projection screen
- Dimmers for lighting, plus zone control (to avoid washout)
- Tie Lines to central control (data/digital video grade)
- Electronic auditable lock on door
- Built-in voice sound systems (ceiling array)
- Flexible feature lighting
- Multiple AV input/output plates around room
- Acoustical isolation improved if equipped with operable partitions (NIC 50 minimum)
- Acoustical treatment to reduce reverberation & eliminate echo on both fixed walls and operable partitions

Medium

- Digital, programmable control system w/in-room control panel
- Programmable lighting control w/in-room control panel
- Ceiling mount projector (minimum 3,000 lumens) w/remote input at front of room
- Sound System point source speakers built-in at main display/screen
- Multiple inputs to projector
- Floor access for power and data tie lines
- Retractable feature lighting fixtures w/tech power and tie lines

High

Projector retracts into ceiling to accommodate social functions

Rear projection built-in with screen concealment

Banner track, lightweight hang track

Show Power

Rigging points, fixed, 1,000# live load

Video Teleconferencing (portable or built-in)

Interactive computer display w/internet access built-in

Web camera, built-in monitoring from central control room

High definition projection built-in

Built in ceiling microphone(s) for room monitoring & recording

Hot room or mix-minus sound system

Multiple AV input/output connections around room

Portable control panel (wired or wireless)

Built-in telephone hybrid

**Multi-Purpose Flexible Function Space
(flat floor Ballroom 4,000 sqft ++)**

Ceiling heights above 12', usually equipped with one or more operable partitions.

Minimum

Portable AV technologies

Wired & wireless HSIA

Power & phone

If windows, blackout electrically operated

Zone control dimmable lighting (to avoid washout)

Programmable lighting control w/in-room control panel (separate & combinable)

Tie Lines to central control (data/digital video grade)

Electronic auditable lock on door

Built-in voice sound systems (ceiling array)

Flexible feature lighting

Multiple AV input/output connections around around room

Acoustical isolation w/operable partitions (NIC 50 minimum)

Acoustical treatment to reduce reverberation & eliminate echo on both fixed walls and operable partitions

Control System w/DSP sound processing

Rigging points, fixed, 1,000# live load (if ceiling height above 12')

Show Power

Medium

Electrical drop down projection screen(s)
Banner track, lightweight hang track
Ceiling mount projector retracts into ceiling to accommodate social functions (minimum 3,000 lumens) w/remote input at front of room
Sound system point source speakers built-in at main display/screen
Multiple inputs to projector
Floor access for power and data tie lines
Retractable feature lighting fixtures w/tech power and tie lines
Increased AV input/output connections around room

High

Rear projection built-in with screen concealment
Video Teleconferencing (portable or built-in)
Web camera, built-in monitoring from central
High definition projection built-in
Portable control panel (wired or wireless)
Built-in telephone hybrid
Cable trunking access, cable management (ceiling & floors)

Auditorium (sloped floor)

Minimum

Portable AV technologies
Wired HSIA wall connections & wireless HSIA
Power outlets and phone connections on all walls
Built-in telephone hybrid
Dimmers for lighting, plus zone control (to avoid washout)
Programmable lighting control w/in-room control panel
Tie Lines to central control (data/digital video grade)
Electronic auditable lock on door
Built-in voice sound systems (ceiling array)
Upgraded flexible feature lighting
Multiple AV input/output plates around room
Acoustical treatment to reduce reverberation & eliminate echo
Lowest level background noise (NC25)
Digital control system w/DSP sound processing
Built-in visual display with ceiling-mount projector (minimum 4,000 lumens) and electrically retractable front projection screen w/remote inputs at front and rear of room
Sound system point source speakers built-in at main display/screen
Internet access (wired jacks) and power at every seat
Wireless assisted listening system (RF or IR)

Medium

Rear projection display built-in (minimum 4,000 lumens)
Interactive computer display w/internet access built-in
Control booth at rear of room
Built-in or removable microphones in audience with microphone management system
Robotic video cameras built-in for image magnification, recording, and webcast/VTC/distance learning
Ceiling microphones for recording and VTC
Recording, production, and post production capability
Cable trunking access, cable management (ceiling & floors)
Video Teleconferencing (portable or built-in)
Webcast, simulcast, digital events
Cluster voice system
Surround sound for program
Interactive lectern
Electrical drop down screen(s)
Banner track, lightweight hang track along side walls
Multiple inputs to projector
Floor access for power and data tie lines
Retractable feature lighting fixtures w/tech power and tie lines
Increased AV input/output capacity on all walls
Portable control panel (wired or wireless)

High

Multi-screen High definition video display
Simultaneous interpretation, multiple language (IR or RF)
Built-in delegate microphones with voting
Mix-minus, "hot room"

Glossary of terms

Glossary: Audio Technologies

Built-in voice sound systems (ceiling array): refers to an array of ceiling speakers that reinforce the sound from microphones and talkers in the meeting room. Distributed ceiling array sound systems provide the highest intelligibility in typical conference spaces.

DSP sound systems: refers to digitally processed sound systems that can be easily controlled by digital control systems.

Telephone Hybrid: Refers to a device that uses the meeting rooms ceiling speakers and microphones to connect with a telephone conference; essentially a very large speaker phone.

Sound system point source speakers built-in at main display/screen: refers to speakers (usually stereo) that are installed in or on the wall flanking the main projection screen. These play the audio portion of the visual program.

Surround sound for program: refers to more sophisticated program audio playback. Requires careful attention to creating a good acoustical environment.

Cluster voice sound system: refers to a sound system that places an engineered speaker above the talkers head and aims the sound energy into the audience from above. Provides most natural sounding voice reinforcement. Only practical in relatively high-ceiling spaces with exceptional acoustics.

Built in ceiling microphone(s) for room monitoring & recording: refers to placing microphones in the ceiling so that the technicians in the control room can hear and record proceedings. In properly designed rooms, provides good recording of audience interaction. Typically used with cameras as well.

Built-in or removable microphones in audience with microphone management system: refers to installation of microphones in fixed seating venues where significant audience interaction is anticipated. Allows for everyone to hear audience questions, for recording, distance learning, etc. May include audience response or voting features.

Simultaneous interpretation, multiple language (IR or RF): refers to a system that accommodates live interpretation during events. Each accommodated language requires a sound proof booth for two interpreters. Audience participants use headphones and receivers to hear the interpretations.

Hot room or mix-minus sound system: refers to a sophisticated array of microphones and speakers in a meeting room ceiling where each microphone's signal is sent to all speakers except for those speakers which are adjacent to the microphone. Thus, the talker's voice is reinforced at a distance from the talker. This requires extremely careful system engineering and attention to room acoustics.

Glossary: Visual Technologies

Manual or electric drop down projection screen: refers to projection screens that retract into a housing either in the ceiling or mounted on the wall. The dimensions of the screen vary according to (1) the size of the room, and (2) the aspect ratio of the image (either 3:4 or 9:16). The vertical dimension of the image height is usually one sixth of the distance from the projection screen to the furthest viewer.

Ceiling mounted projector w/remote inputs: Refers to permanently installing a projector either tight to the ceiling or suspended from the ceiling on a pole or other mount structure. The projector can be positioned no higher than the top of the image on the screen when in use.

Retractable projector lift for social functions: refers to a mechanism that can retract the projector into the ceiling so that social functions may be held without the distraction of seeing the projector on the ceiling. The mechanism can lower the projector to the proper position for projection when needed.

Built-in flat-panel LCD display w/remote input: refers to installing a current technology flat panel display on the object wall of the event space. These may be visible in more utilitarian rooms, or concealable in higher-finish rooms. Practical for small to medium sized rooms, due to current size limitations.

High definition projection built-in: refers to the larger 9:16 aspect ratio format for visual displays, both projection and flat-panel. All future built-in display technologies should anticipate this format.

Interactive computer display w/internet access built-in: refers to technologies which use touch-screen computer displays of various sizes to allow the presenter to interact with the computer during presentations.

Rear Projection: refers to display technologies that locate a projector behind a translucent projection screen material. This is used in more high-end venues because it minimizes distraction from having a projector hung above the audience, it does not shine light into the presenters' eyes, and allows for a more natural interaction between the presenters and the program material. It does require space behind the display. Self-contained rear-projection display cubes may be 24" to 48" deep, while single projector rear projection displays may require 10' to 15' of depth behind the display.

Robotic video cameras built-in for image magnification, recording, and webcast/VTC/distance learning: refers to video cameras in the meeting space that are operated by a technician who is not in the meeting space. The cameras can be made to pan, tilt, zoom, focus, etc. remotely, making their use less intrusive or distracting compared to having camera operators in the meeting room.

Web camera, built-in monitoring from central control room: refers to smaller, lower quality cameras that are used by the conference center staff to monitor activities in a meeting room from any staff computer. May also be used for basic webcasting or archival recording of an event.

Glossary: Lighting

Dimmers for lighting, plus zone control (to avoid washout): refers to the ability to adjust light levels in a meeting room. Also, to turn off the lights individually which are located where they would wash out the most commonly used projection screen locations. Built-in projection screens may have their up/down controls automatically turn off these light fixtures.

Programmable lighting control w/in-room control panel: refers to digitally controlled dimmer systems which have multiple circuits of control and multiple pre-set scenes. For example, there may be one circuit for the downlights, one for wall washers, one for the chandeliers, one for the sconces, and one for the track lights. Changing from one scene to another is one button touch.

Flexible feature lighting: refers to the means of highlighting the lectern, podium, exhibit, display, panel, or platform or any other feature independently from the main room lights. This function may be provided using recessed "eyeball" fixtures, commercial track lights, light pipes, or retractable lighting fixtures.

Retractable feature lighting fixtures w/tech power and tie lines (Litelab BussPort): refers to a means of supporting and powering lighting fixtures. This mechanism retracts into the ceiling when not in use and is lowered manually when needed, and equipped with light fixtures. When lowered, connectors are accessible for dimmed lighting circuits, technical power, and network circuits for control, audio, and video signals. It can also be used to support projectors, monitors, powered speakers, and is load-rated (500# live load; 800# dead hang) allowing it to be used as a rigging point for trussing and other production elements.

Glossary: Acoustics

Acoustical treatment to reduce reverberation & echoes on both fixed walls and operable partitions: refers to the means of controlling unwanted reverberation and echo sound energy by absorbing it within the room. This is most practically provided by using fabric-wrapped, acoustically absorptive panels on the wall surfaces, from approximately the chair rail up at least eight feet.

Low levels of background noise (NC25): refers to controlling the loudness of background noises generated by HVAC systems, sound from service corridors, sound from outside through the walls and roof, and sound from adjacent spaces.

Acoustical isolation w/operable partitions (NIC 50 minimum): refers to the quality of sound isolation afforded by the operable partitions. This involves not only the quality of the partition itself, but also the surrounding construction including sealing the partition track to the structure above, providing adequate blocking at the end walls to prevent sound from flanking the partition, proper adjustment and maintenance of top and bottom partition seals, etc.

Glossary: Production

Accommodates Portable AV Technologies: refers to the effort to ensure that the interior architecture and design elements, power and signal infrastructure, and arrangement of the room is developed to support the use of all types of portable audiovisual presentation and event technologies.

Tie Lines to central control (data/digital video grade): refers to providing multiple circuits from various locations within the event spaces run to patch panels leading to the central control room, or at least to the nearest MDF or IDF. Tie lines may be copper Ethernet cabling (low-skew Category 5 is best), fiber optic, audio, or video. These circuits may be used to interconnect any combination of spaces with each other; to route tele-data services to any space; to provide control, monitoring, or recording; or to simply avoid using cables taped across the floor within the space itself.

Multiple AV input/output connections around room: refers to locating analog and digital inputs and analog outputs on panels around the periphery of the room to accommodate a wide variety of room arrangements.

Digital, programmable control system w/in-room control panel; optional portable control panel (wired & wireless): refers to systems that interconnect between all of the built-in analog and digital audio and visual systems and equipment to provide synchronized, intuitive user access and control for all anticipated functions. These systems may also connect with an dcontrol environmental elements such as window drapes or shades, programmable lighting control systems, etc.

Video teleconferencing (portable or built-in): refers to the provision of equipment to accommodate interconnection with other locations for teleconferences. Both IP based and switched-network services should be accommodated.

Webcast, simulcast, digital events: refers to production services that include distance learning, video and audio teleconferencing, webcasting, broadcasting, on-demand online services, etc.

Interactive lectern: describes a lectern that is equipped with a control panel and usually an interactive computer interface as described above.

Glossary: Infrastructure

Wired HSIA wall connections & wireless HSIA: refers to **H**igh **S**peed **I**nternet **A**ccess. wired connections are mandated due to many current government and corporate policies that prohibit the use of wireless technologies. Wireless internet access may be provided to accommodate guests and/or staff.

Power outlets and phone connections on all walls: refers to locating convenience outlets and telephone connections all around the periphery of the event space to minimize long runs of cables.

Blackout capabilities for windows: refers to providing a means of eliminating all light through any windows into a meeting space. This is to accommodate typical visual projection display technologies as well as minimizing light fluctuations during video teleconferences.

Floor access for power and data tie lines: refers to the provision of floor access jacks (“poke-throughs”), and floor boxes or pockets equipped with convenience power outlets and network connectors.

Electronic Auditable lock on door: refers to provision of locks which can be programmed to each guests’ access requirements and which will record the time and key number each time it is used, for tracking purposes.

Banner track, lightweight hang track: refers to the provision of structural steel channel on the ceiling around the periphery of each event space. This is used to suspend banners, curtains, posters, scenery elements, etc. without requiring attachment to millwork or other interior surface treatment. Examples are UniStrut, SuperStrut, and Kindorf.

Show Power: refers to the provision of heavy three-phase electrical power service to run theatrical lighting systems for larger staged events and productions.

Rigging points, fixed, 1,000# live load: refers to load-rated hardware that is attached to the building structure such that it is designed to support theatrical and production stagecraft elements such as loaded trusses.

Cable trunking access, cable management (ceiling & floors): refers to providing a means to run cables from point to point, properly supported and accessible. These may be temporary or permanent cables, or both. Typical means include cable trays (center-hung, not trapeze), troughs, trenches, and “J” hooks.