



DCH Technology Consulting

Independent Consulting in Audiovisual, Control, and Smart Technology Integration

The Anatomy of a Modern Conference Room: Designing for Human Experience and Equitable Collaboration

Prepared by: Douglas Hoag
Email: douglas.hoag@dchtc.com
Phone: (970) 313-3062

Table of Contents

1	Summary	3
2	Designing for Human Experience	3
2.1	Visual Ergonomics and Sightlines	3
2.2	Audio Quality and Spatial Coverage	3
2.3	Lighting and Facial Clarity	3
2.4	Seating, Comfort, and Accessibility	4
2.5	Creating Equity in Hybrid Meetings	4
2.6	Camera Placement and Participant Visibility	4
2.7	Microphone Strategy and Voice Clarity	4
2.8	Loudspeaker Coverage and Audio Reinforcement	4
2.9	Shared Interfaces and Meeting Control	4
2.10	Visual Reinforcement of Remote Participants	4
3	Technology Infrastructure and Intentional Integration	4
3.1	Infrastructure that Matches the Room, Not the Catalog	4
3.2	Intentional Integration, Not Afterthought Add-ons	5
3.3	Network and Power Planning for Flexibility	5
4	Codec vs. BYOM: Understanding the Tradeoffs	5
4.1	Dedicated Codecs: Reliability with Limitations	5
4.2	BYOM: Flexibility First	5
4.3	Hybrid Systems: The Best of Both Worlds	5
5	BYOD Presentation Systems: Convenience or Chaos?	5
5.1	What BYOD Really Means	5
5.2	Wired vs. Wireless: Know When to Use Each	5
5.3	Device Compatibility and User Expectations	5
6	Best Practices and Common Pitfalls	6
6.1	Best Practices	6
6.2	Common Pitfalls	6
7	Conclusion: Designing Rooms People Want to Use	6
8	About DCH Technology Consulting	6
8.1	Services Include:	6

1 Summary

Conference rooms support everyday collaboration, important decisions, and conversations with people joining from other locations. The quality of that experience depends on how well the room supports everyone involved. As organizations adapt to hybrid meetings, room layout and technology need to work together so participants can see, hear, and contribute comfortably.

Yet far too often, rooms are designed around technology checklists instead of the people using them. Displays are placed too high, cameras miss key participants, and poor acoustics leave remote attendees straining to follow the conversation. These problems create barriers to productivity, inclusion, and engagement.

This white paper explores the anatomy of a well-designed conference room from the perspective that matters most: the human experience. We'll examine how thoughtful design fosters equity between in-room and remote participants, and why camera placement, microphone integration, and lighting are not technical afterthoughts—but foundational decisions. We'll also break down the pros and cons of dedicated video codecs, Bring Your Own Meeting (BYOM) platforms, and Bring Your Own Device (BYOD) presentation systems, helping owners and stakeholders make informed decisions based on real-world usage and long-term goals.

At DCH Technology Consulting, we believe conference room technology should work so intuitively that users can focus on the meeting. If you're planning a new space or renovating an existing one, this paper introduces considerations that help create rooms that are functional, flexible, and supportive of both in-room and remote participants.

2 Designing for Human Experience

The success of a conference room depends on how well it supports the people using it. Designing for the human experience means considering visual, auditory, and ergonomic needs together so participants can communicate comfortably and use the room with confidence.

2.1 Visual Ergonomics and Sightlines

A well-placed display should fall naturally within a user's field of vision. Overly large displays or unnecessarily high mounting heights are common missteps. In many cases, a modestly sized display paired with a smart seating layout can provide excellent visibility without requiring excessive investment.

Strategic placement of cameras ensures that participants are seen naturally and clearly. Auto-framing and eye-level positioning support a more inclusive and human-centered experience.

2.2 Audio Quality and Spatial Coverage

The right microphone strategy doesn't always mean the most expensive. It means selecting technology suited to the room's acoustics, layout, and intended use. Smaller huddle rooms may work well with a single tabletop or ceiling microphone, while larger spaces may benefit from arrays or distributed pickup. The key is recognizing when additional coverage is needed and when a simpler approach is sufficient.

Loudspeaker placement must consider even coverage and clarity, ensuring remote voices are intelligible and in-room voices are reinforced appropriately.

2.3 Lighting and Facial Clarity

Lighting plays a critical role in both in-person comfort and on-camera appearance. Harsh downlighting can cast shadows; inconsistent lighting affects engagement.

Balanced ambient and directional lighting, combined with camera-aware strategies, create a more engaging and natural visual environment. Even in cost-conscious projects, intentional lighting planning makes a noticeable difference.

2.4 Seating, Comfort, and Accessibility

Room shape and furniture layout directly influence technology needs. A square layout may require fewer mics and allow for simpler audio design than a long, narrow room. Ergonomic chairs, proper spacing, and accessible controls all contribute to a positive experience.

Tables should support clear sightlines and access to microphones or touch interfaces without creating clutter or distraction.

2.5 Creating Equity in Hybrid Meetings

Hybrid meetings introduce a persistent challenge: ensuring that remote participants have the same ability to contribute, engage, and be heard as those in the room.

2.6 Camera Placement and Participant Visibility

Camera placement should reflect where participants sit and how they interact. A single, well-positioned camera may serve a smaller room effectively, while larger spaces may require multiple cameras or intelligent framing. The goal is clear participant visibility through an approach suited to the room.

2.7 Microphone Strategy and Voice Clarity

Clear coverage across all seating zones is key. Some rooms may only need one or two well-placed microphones, while others benefit from distributed coverage. Design should prioritize intelligibility and consistency without excessive complexity.

2.8 Loudspeaker Coverage and Audio Reinforcement

Loudspeaker coverage should allow participants throughout the room to hear remote voices clearly and comfortably. Speaker selection, placement, and tuning should suit the room's layout and acoustics. Where voice lift is appropriate, it should support natural conversation without drawing attention to the system.

2.9 Shared Interfaces and Meeting Control

Equitable control means intuitive access from multiple points. Whether via wireless panels, personal devices, or localized controls, interfaces should be simple, discoverable, and consistent.

2.10 Visual Reinforcement of Remote Participants

Remote participants should be displayed prominently, not relegated to a secondary screen. The goal is to place them at eye level and maintain their presence throughout the meeting. Dual displays can be used to separate content from video feeds but aren't always necessary.

3 Technology Infrastructure and Intentional Integration

The best technology is the kind users barely notice. Designing the backbone of a conference room starts with understanding workflow, room dimensions, and user expectations.

3.1 Infrastructure that Matches the Room, Not the Catalog

Infrastructure should reflect the room's intended use and support requirements. Some spaces can meet their needs with a straightforward USB connection, while others require additional audio processing or signal distribution. The appropriate level of complexity should follow the workflow and performance needs established during planning.

A smart layout can reduce device count, simplify infrastructure, and lower long-term maintenance costs.

3.2 Intentional Integration, Not Afterthought Add-ons

Integrate AV into the architecture, not around it. Work with designers early to embed touch panels, conceal cables, and maintain aesthetics. AV should enhance, not disrupt, the built environment.

3.3 Network and Power Planning for Flexibility

Infrastructure should support future growth without overbuilding. Provide adequate data drops, PoE planning, and clear port requirements. AVoverIP solutions should be aligned with IT standards and well-documented.

4 Codec vs. BYOM: Understanding the Tradeoffs

Choosing between dedicated codecs and BYOM depends on organizational needs, not product hype.

4.1 Dedicated Codecs: Reliability with Limitations

Ideal for standardized environments or high-stakes meetings. They provide rock-solid stability but limit flexibility and can increase cost.

4.2 BYOM: Flexibility First

BYOM allows users to launch meetings from their laptops, supporting multiple platforms. It's ideal for flexible spaces and smaller organizations but introduces more variability.

4.3 Hybrid Systems: The Best of Both Worlds

Some spaces benefit from having both a codec and a BYOM option. This requires thoughtful integration to avoid user confusion.

5 BYOD Presentation Systems: Convenience or Chaos?

Presentation systems must support a wide range of devices with minimal friction.

5.1 What BYOD Really Means

BYOD means users can share content easily, whether wired or wireless. Systems must be intuitive and platform-neutral.

5.2 Wired vs. Wireless: Know When to Use Each

Wireless is great for informal settings; wired provides reliability and better performance. Always offer both.

5.3 Device Compatibility and User Expectations

Avoid custom apps when possible. Provide simple, secure, well-documented workflows. Support the majority of devices without making presenters think twice.

6 Best Practices and Common Pitfalls

6.1 Best Practices

- Involve stakeholders early
- Design room before selecting tech
- Use mockups and user scenarios
- Choose scalable, standards-based gear
- Simplify user control
- Plan for serviceability
- Document everything

6.2 Common Pitfalls

- Designing around product, not need
- Overreliance on wireless
- Poor camera/display placement
- Complicated interfaces
- Late IT involvement
- Ignoring room acoustics
- Treating conference rooms as afterthoughts

7 Conclusion: Designing Rooms People Want to Use

Conference rooms should be places where people want to meet. Thoughtful design supports conversation, engagement, and ease of use, with technology selected to fit those goals.

Technology should serve the meeting, not dominate it. By aligning room layout, infrastructure, and workflows with real human behavior, you create spaces that feel seamless, inclusive, and effective.

A well-designed conference room brings the space, its users, and its technology into alignment. Thoughtful planning helps people communicate naturally and use the room with confidence.

8 About DCH Technology Consulting

DCH Technology Consulting is an independent advisory firm specializing in audiovisual, control, and smart technology integration. We help clients create systems that support human connection by balancing technical performance, intuitive operation, and integration with the architecture.

8.1 Services Include:

- Technology consulting and system design
- Audiovisual and control standards development
- BYOM and BYOD strategy planning
- Owner's representative support
- Human-centered layout review and peer consulting

If you're planning a new conference room or wondering why your current one isn't working, let's talk.

Douglas Hoag
Principal Consultant, DCH Technology Consulting
douglas.hoag@dchtc.com | (970) 313-3062 | www.dchtc.com