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BIM Acoustics AVTools System Designer

AV Tools System Design
BIM Acoustics - AV Tools Suite

Rooms Configuration Preview & Place Results About

Set the default listener height, spacing mode, and loudspeaker for this run, then adjust settings and loudspeaker choices per room as needed.
Refresh Calculations is required before moving to Preview & Place after any change.

Default Listener Height (ft): 6 Edge Extend (%): 10 Overlap (%): 25 Default Spacing Mode: Minimum Overlap Default Loudspeaker: Atlas-IsoFlare

#	Room Name	Ceiling (ft)	Host	Host Plane	Spacing Mode	Listener Hgt (ft)	Layout Mode	Grid X	Grid Y	Loudspeaker
202	Instruction 202	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
203	Computer Lab 203	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
204	Instruction 204	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
205	Instruction 205	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
235	Corridor 235	8.53	Ceiling / Auto		Edge to Edge	6.00	Per Spacing Selection			Atlas-IsoFlare FC Ceiling Mox
210	Men 210	8.53	Ceiling / Auto		Edge to Edge	6.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
211	Women 211	8.53	Ceiling / Auto		Edge to Edge	6.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
212	Lounge 212	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
216	Lobby 216	8.53	Ceiling / Auto		Edge to Edge	6.00	Per Spacing Selection			Atlas-IsoFlare FC Ceiling Mox
218	Instruction 218	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
219	Library 219	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
221	Instruction 221	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
222	Computer Lab 222	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
223	Lounge 223	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
224	Cafeteria 224	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
225	Women 225	8.53	Ceiling / Auto		Edge to Edge	6.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
226	Men 226	8.53	Ceiling / Auto		Edge to Edge	6.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
234	Corridor 234	8.53	Ceiling / Auto		Edge to Edge	6.00	Per Spacing Selection			Atlas-IsoFlare FC Ceiling Mox
206	Lounge 206	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
209	Computer Lab 209	8.53	Ceiling / Auto		Minimum Overlap	4.00	600x600 Tile	1.97	1.97	Atlas-IsoFlare FC Ceiling Mox
213	Instruction 213	8.53	Ceiling / Auto		Minimum Overlap	4.00	Per Spacing Selection			Atlas-IsoFlare FC Ceiling Mox

Back: Rooms

Lucius AI
BIM Acoustics - AV Tools Suite — System Design

[Lucius]
Lucius AI is ready.

BIM Acoustics - AV Tools Suite
System Design

Ask questions any time.
If Training Mode is ON, commands are: Next, Speak, Details, Explain, Restart.

[Lucius]
STEP 1 — Rooms tab

Select rooms in the Rooms tab list, then click Next (lower right).

[System]
Training Mode is ON. Commands: Next, Speak, Details, Explain, Restart.

No attachment.

☒ Training Mode (guided tutorial) ☒ Voice

Distributed Loudspeaker Systems for Revit

Product Type: Revit Add-In

Platform: Autodesk Revit 2022–2026

Discipline: Audio-Video / Acoustics

Developer: J. Stevens BIM Acoustics

Overview

AVTools System Designer is a Revit add-in that automates and standardizes the layout of distributed ceiling loudspeaker systems directly within the BIM model. It is designed to reduce repetitive manual layout work, improve consistency across multi-room projects, and clearly express system intent early in design.

System Designer combines **rule-based automation** with **Lucius**, an integrated AI design assistant. The add-in handles repetitive layout tasks, while Lucius explains the assumptions and best practices behind those results. All final design decisions remain under the control of the engineer.

System Designer focuses on **geometric layout, spacing logic, and system-level intent**, not full acoustic simulation. It is intended to complement—rather than replace—detailed acoustic modeling tools and professional judgment.

Primary Use Cases

- Distributed ceiling loudspeaker systems
 - Projects with many similar rooms (education, office, hospitality, healthcare, civic)
 - Early-stage AV system layout and coordination in Revit
 - Consultants seeking faster, more repeatable layouts with transparent assumptions
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Room-Aware Design Assistance

AVTools System Designer leverages **native Revit room data** to assist designers in identifying and prioritizing spaces that are likely to require audio coverage.

Using room names, room types, and model geometry, the add-in can help filter and group spaces such as:

- Conference rooms
- Meeting rooms
- Boardrooms
- Classrooms
- Restaurants and dining areas
- Corridors and circulation spaces
- Multi-purpose and assembly rooms

This room-aware approach accelerates the transition from model intake to review-ready layouts, while allowing designers to include, exclude, or override any space as needed.

Best-Practice–Driven Defaults (Designer-Controlled)

System Designer applies **transparent best-practice assumptions** derived from established distributed-system design methods to reduce repetitive setup tasks. These include assistance with:

- Spacing patterns appropriate for distributed ceiling loudspeaker systems
- Listener plane assumptions based on typical room use
- Target SPL guidance for speech and background music applications
- Initial tap recommendations consistent with spacing and coverage intent

All suggested values are **visible, adjustable, and optional**. The tool accelerates setup but does not hide assumptions or override engineering judgment.

Lucius AI — Integrated Design Assistant

Lucius is an AI-based design assistant integrated with AVTools System Designer. It is trained specifically on:

- The capabilities and limitations of System Designer
- Distributed loudspeaker design principles used by the add-in
- Spacing logic, coverage intent, and layout assumptions
- Best practices for Revit-based AV workflows

Lucius can:

- Explain how and why loudspeakers were placed
- Clarify spacing models, overlap intent, and listener assumptions
- Describe what the tool does and does not calculate
- Help users validate results before refinement

Lucius does **not** make design decisions or modify the model autonomously. It exists to increase **transparency, trust, and understanding** when automation is involved.

Editions

System Designer (Standard)

Focus: Layout automation with explainable design intent

Includes:

- Automated ceiling-hosted loudspeaker placement using industry-standard spacing models
- Room-aware filtering and prioritization using Revit room data
- Basic ISO-line (isobar) coverage visualization for relative uniformity
- Target SPL input with tap-setting recommendations
- Integrated Lucius AI for explanation of layout intent and best practices

Does **not** include:

- Frequency-dependent acoustic simulation
- SPL or STI prediction maps
- EASE-style modeling

System Designer (Standard) is intentionally focused on **speed, consistency, and clarity inside Revit**, not replacing specialized acoustic analysis tools.

System Designer (Pro) — Planned

Focus: Early validation and deeper analysis within Revit

Planned enhancements include:

- Enhanced coverage mapping using loudspeaker balloon data (where available)
- Improved spatial coverage visualization beyond basic ISO-line mapping
- Early-stage room acoustics metrics (RT60, STI)
- Electrical system modeling:
 - Amplifier loading
 - Circuiting
 - Line-loss analysis
- Expanded Lucius AI guidance aligned with these advanced features

Target Availability: *Q2 2026 (subject to change)*

Design Philosophy

AVTools System Designer is built from real-world consulting workflows. Its goal is to:

- Reduce repetitive manual work
- Make design assumptions visible and explainable
- Improve coordination and repeatability
- Preserve professional engineering judgment

The add-in is designed for **review and refinement**, not replacement of experience.

Availability

- **Edition:** System Designer (Standard)
 - **Status:** Limited early access
 - **Platform:** Autodesk Revit 2022–2026
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Learn More

- Ask **Lucius** directly on the BIM Acoustics website for detailed explanations
- Contact: info@bimacoustics.net