JBL SYNTHESIS CINEMA ROOM REFIT AND REFURBISHMENT 9.2.4 SYSTEM UPGRADE

Amber TECHNOLOGY
CASE STUDY

A 13-year-old theatre reborn as a modern reference cinema delivering breathtaking scale, precision, and immersion without moving a single wall.

PROJECT OVERVIEW

This project proves that with the right system design and the performance of ***JBL Synthesis***, even a 13 year old cinema room can be transformed into a true reference-grade immersive theatre without structural changes.

The result is a powerful, highly accurate 9.2.4 cinema that meets modern performance standards without requiring structural modifications.

INITIAL PROJECT REQUIREMENT

The project aimed to completely update and modernise a 13-year-old JBL Synthesis home theatre system while maintaining the room's existing layout and acoustic integrity.

The client wanted a substantial uplift in performance, immersion, and visual quality, but without the cost and disruption of rebuilding the room. This required careful system design, precise product selection, and expert integration to deliver a step-change in performance within the original footprint.

PROJECT OBJECTIVES

The key objectives were clearly defined:

- Upgrade to the latest generation of JBL Synthesis architectural speakers and electronics
- Improve power handling, dynamic performance, and spatial accuracy
- Enhance immersive surround and overhead effects through expanded channel counts
- Replace and modernise projection and screen technology for sharper, brighter imaging
- Achieve a reference-grade cinematic experience within the existing room structure

SOLUTION AND PRODUCT SELECTION

Loudspeaker System

The JBL Synthesis SCL Series speakers and SWW2 subwoofers were selected as the foundation of the upgrade due to their proven cinema pedigree and architectural flexibility

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Why these products were chosen:

• High output capability and precision compression driver technology, ideal for reference-level cinema
• Seamless timbre matching across LCR, surround, and height channels
• Architectural in-wall form factor enabling a clean, integrated aesthetic
• Proven reliability and strong engineering support through Amber Technology, ensuring long-term performance

System configuration included:

• 3 × SCL-2 front speakers (LCR)
• 6 × SCL-4 surround speakers
• 4 × SCL-5 height (Atmos) speakers
• Multiple SSW2 subwoofers

Screen and Projection

The ***Grandview 140" 16:9 flocked micro-perforated screen*** was selected for its ability to allow the LCR speakers to be positioned at the correct acoustic height behind the image plane while maintaining excellent picture detail.

An ***Optoma laser projector*** was chosen to drive the large 140" image, offering:
• Long-life laser light engine
• High brightness for large-screen performance
• Excellent sharpness and colour reproduction
• Strong reliability for dedicated cinema environments

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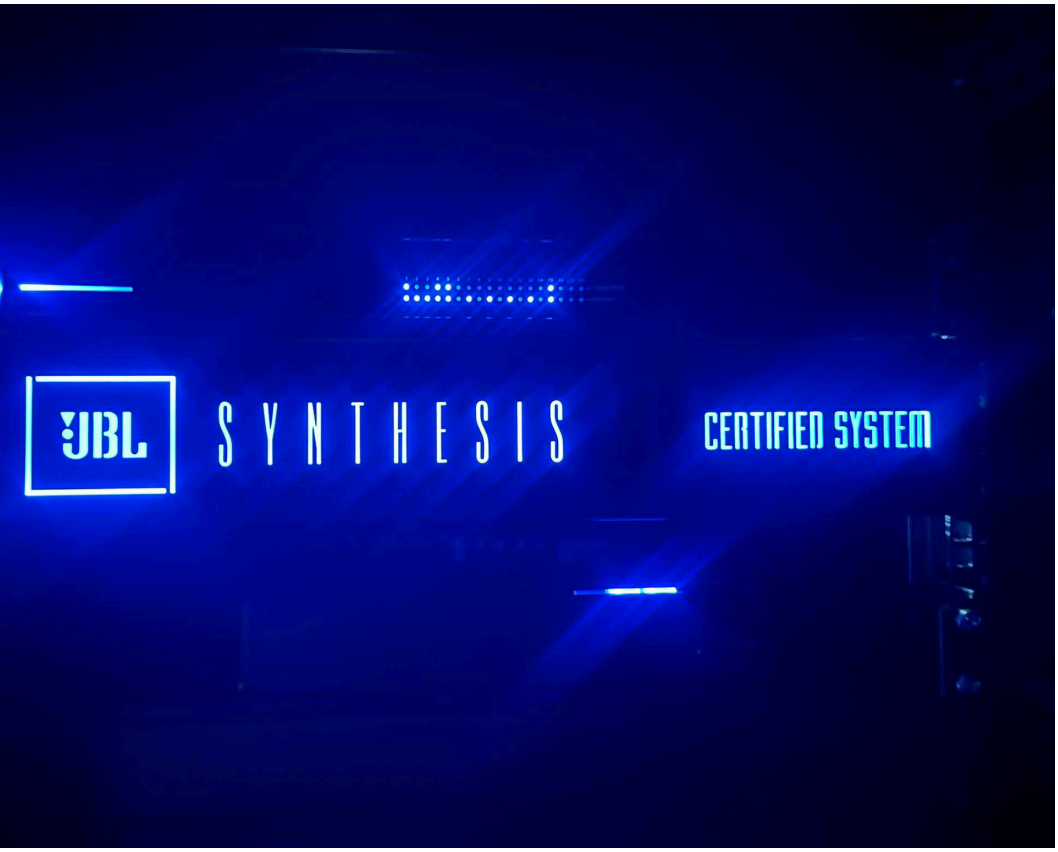

UNIQUE PROJECT ELEMENTS

Several aspects made this installation particularly noteworthy:

· ***Modernising without structural changes***

The team successfully transitioned a 13-year-old theatre into a modern 9.2.4 JBL Synthesis layout while preserving the existing room structure and acoustics, a significant technical achievement.

· ***Correct front soundstage implementation***

Three SCL-2 front speakers were precisely integrated behind the micro-perforated screen, enabling proper acoustic alignment with on-screen action and dramatically improving dialogue localisation.

· ***Full 360-degree surround field***

Six SCL-4 surround speakers were deployed to create complete lateral and rear envelopment, delivering a far more immersive sound field than the original system.

· ***Accurate overhead Atmos layer***

Four SCL-5 height speakers were installed in accordance with Dolby guidelines, producing highly convincing overhead imaging and object placement.

· ***Enhanced low-frequency architecture***

Multiple SWW2 subwoofers were implemented to improve both bass impact and seat-to-seat consistency, significantly outperforming the previous low-frequency system.

KEY RESULTS

The completed upgrade delivered measurable and immediately audible improvements:

- Dramatically improved clarity, output, and spatial accuracy compared to the previous system
- A seamless front soundstage with precise dialogue localisation
- Balanced, room-filling bass response enabled by multiple SWW2 subwoofers
- Enhanced immersive Atmos effects due to correct SCL-5 height placement
- A brighter, more detailed 140” image with improved sharpness and colour from the new Optoma laser projector
- A refined, fully modernised cinema experience aligned with today’s reference standards

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"The upgrade exceeded expectations. The new JBL Synthesis system, supplied through Amber Technology, has transformed the room into a true reference-grade cinema.

The SCL speakers and SWW2 subs deliver incredible precision, dynamics, and immersion, and the Grandview screen paired with the Optoma laser projector looks outstanding.

It's a huge improvement over the original system and an exceptional result overall."

Kris Leffler Manager, Smart Technologies at Harvey Norman Commercial Division

CONCLUSION

By carefully balancing performance goals with the constraints of the existing room, Amber Technology successfully delivered a next-generation immersive cinema without structural modification. The project demonstrates how the latest JBL Synthesis solutions, when properly designed and supported, can transform legacy theatres into true reference-grade environments.

Installation

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Grandview

JBL SYNTHESIS by HARMAN

Optoma