Case Studies

SAMSUNG KX
"DO WHAT YOU CAN'T"

Coal Drops Yard, King's Cross
London

AV AWARDS 2020
POWERED BY Installation
WINNER

SAMSUNG

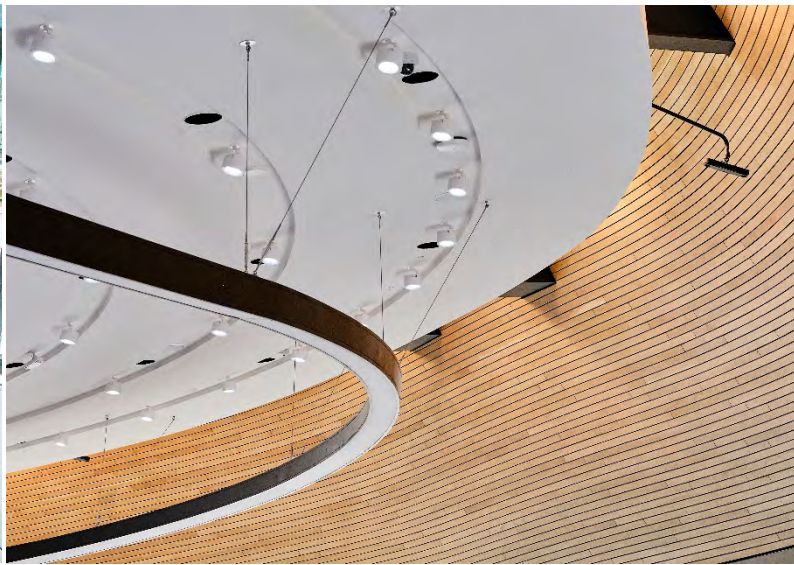# How can...

AV engineering support a place of discovery - where guests are among the first in the world to try Samsung's one-of-a-kind concepts, technologies and innovation?

#SamsungKX #DoWhatYouCant

"
This flagship space…
will allow visitors to
**see, hear, and experience
all we have to offer.**
"

- **Younghee Lee,** CMO of Samsung Electronics

World's first 10-metre wide vertically curved Samsung LED wall

Redefining the retail experience.

It's not a shop.

Visitors are among the first in the world to experience Samsung's latest technologies and discover through simulated environments (such as smart homes, connected kitchens and integrated in-car experiences of the future) how Samsung's latest innovations connect and elevate our lives.

"Do what you can't"

Emphasis on Culture

Samsung KX places huge emphasis on local culture. The stage and its unique main screen are used to host performances by local talent, film nights and immersive wellness classes.

An inspiration hub for those living in – and visiting – London

The entire space has been conceptualised and built to capture the imagination and spirit of the King's Cross community. To this extent, Samsung is also working with local community groups that will benefit from the space, ranging from charities such as Small Green Shoots to art and culture organisations such as Central Saint Martin's, Young Film Academy and University College London.

Designed to Feel. Discover.

Samsung KX is therefore many things – music venue, yoga studio, gallery, classroom, workspace, film club, café, exhibition, design centre, science lab, gaming studio and more.

The purpose of the space is to help feel and discover how Samsung's technology and connected experiences can transform our lives.

Enabling people to 'do what you can't'.

Multiplicity

The space is intended to simulate a variety of environments and support a wide array of live events. The AV infrastructure had to effortlessly support multiplicity and system flexibility – from film screenings to live musical performances, wellness classes and exhibitions to seminars and more.

Snelling
Business Systems

Audio Visual Integration

Delivering immersive experiences to discover the impact of Samsung's technologies relies upon the efficacy of audio-visual design and engineering – cabling and infrastructure, equipment and installation, programming and customisation, flexibility and futureproofing.

The requirements at a glance:

1. 4K UHD video infrastructure and video over IP powered by ZeeVee Zyper4K AVoIP Content Distribution Network (CDN).
2. High quality, fully flexible networked (Dante) audio system with low impedance circuits suitable for events, talks, lectures, small bands/music performances, cinema playback.
3. 100% video, audio and control over IP network
4. LAN Networked for control, monitoring, management and systems integration
5. "ScreenMax" 6720x2880 over four 4K UHD large LED video wall feature
6. All video sources routed through the Cisco switch to the 23 displays systems in the space via the ZeeVee Zyper 4K SDVoE
7. Uncompressed 4K 4:4:4 60Hz HDR10+ UHD video distributed over a dedicated 10Gb OS2 single mode fibre LAN with Cisco core switches
8. Distributed audio system for full flexibility in the use of the space.
9. 216 active 10 Gb fibre ports through the MER into 172 port Cisco Nexus 9504 10 Gb fibre switch
10. Green Hippo content media servers
11. 26 Brightsign players for 4K HDR10+ content for dedicated Samsung displays
12. Video conferencing system
13. AMX control system & touch panel control
14. Custom connectivity panels

Image copyright: Samsung Electronics

Samsung KX is configured for flexibility.

Guests can engage with a range of awe-inspiring experiences, events and skill-sharing workshops. The objective of the project is to showcase the full Samsung ecosystem- how multiple devices and services come together to deliver a complete and harmonised experience.

Retail Mode

Distributed 4K UHD resolution content played to the ScreenMax wall and/or distributed on the screens around the experience centre. 8K content can also be played locally on relevant displays via on-board/USB/mass storage. The audio content plays through the distributed audio system.

Film Screenings

Film screenings at the experience centre is possible with content played from a Pioneer UDP-LX800 Blu-Ray player located in the MER. This content is distributed over the AVoIP system to the ScreenMax wall and/or other screens. A Trinnov cinema audio decoder provides multi-channel (surround) audio content from the Blu-Ray players, routed to the main loudspeakers (for centre/left/right channels) and to connection plates (for surround / rear channels) where temporary loudspeakers can be connected.

Live Music / "DJ Booth"

To support live music acts, two front-of-house (FoH) floor boxes allow connectivity of an audio mixing desk for routing of instrument/vocal audio channels and monitors between the FoH position and the stage via a stage box. There is also connectivity in the floor boxes for a lighting control desk and LAN connections for digital connectivity into the Dante audio network.

Effectively, Samsung exhibit the use of galaxy devices within the DJ Console.

Talks and Lectures

Two HDMI inputs at the Stage Box location allow video and audio from devices to connect into the ZeeVee CDN for display onto the ScreenMax wall and audio distribution to the loudspeakers around the ScreenMax.

Wireless microphones provide speech reinforcement to the ceiling loudspeakers, and three PTZ video cameras installed in the ceiling troughs on the West side capture full view of the stage to ZeeVee encoders.

eSports & Gaming

The experience centre can host eSports and live gaming events. The technology and equipment connect to one of two floor boxes with dual HDMI inputs to ZeeVee encoders that form part of this specification.

Graffiti Wall

The PC server hosting the Graffiti Experience software connects to an input card of a Green Hippo media server to facilitate display onto the ScreenMax wall.

VR Racing Experience

While the VR Racing Experience is self-contained and independent of the AV systems, fibre and data provision is routed to the VR Racing locations for future flexibility.

Digital Cockpit

This Experience is self-contained and independent of the AV systems; however, fibre and data provision has been allowed at the Digital Car location for future flexibility with HDMI connectivity between the car location and the associated 96" TV display.

The Wall Pro

This is a 3.2m wide LED wall located in the East side of the store. Two monitor loudspeakers located at the sides of The Wall provide the content audio. Audio can also be routed to subwoofers in the distributed sound system for more impact.

ScreenMax LED Video wall

ScreenMax is comprised of 21 (wide) by 8 (tall) Samsung IF015H 1.5mm pixel pitch LED Modules in a curved configuration. While the size was mainly dictated by architectural/aesthetic considerations, this resolution required the configuration and S-Box tiling to be programmed with suitable pixel canvasing from one of the Green Hippo units - to split the content resolution of 6720x2880 over four 4K UHD and onto the ScreenMax display.

Capable of 4K movie content (with 7.1 audio via JBL cinema speakers) for the 60-seater audience (expandable to 80), it can also run store content, graffiti mode (Galaxy Graffiti) in which visitors can use a digital spray can to create messages on the wall. ScreenMax uses a host of BlackTrax tracking cameras (installed by Snelling Business Systems) to give X and Y positions on the wall. A portable lectern also allows presenters to use the 10m screen with two 4K PTZ cameras installed in the ceiling to provide live video of the presenter.
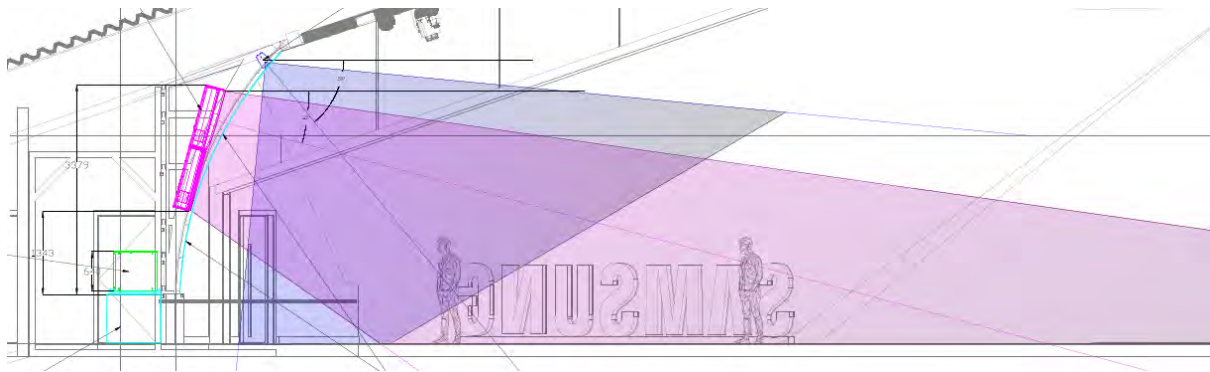
Distributed Audio System

The distributed audio system comprises of:

- Crown amplifiers and BSS Soundweb DSP in the MER/SER racks
- ScreenMax stage system located around the ScreenMax wall
    - 2x JBL CBT1000+E line array column loudspeakers either side
    - 4x JBL AC16 loudspeakers as infill above the ScreenMax
    - 2x JBL VTX F18 subwoofers either side
- Recessed wall and ceiling speakers around the store for further audio distribution
    - 5x JBL AC16/AC25 loudspeakers recessed in the East Zone walls
    - 4x JBL AC16 loudspeakers recessed in the West Zone walls (additional to the ScreenMax infill)
    - 24x JBL Control 16C-VA loudspeakers installed into the ceiling troughs
- 2x JBL S3900 Monitor loudspeakers as part of The Wall Pro structure
- East Side subwoofers
    - 2x JBL AC115s integrated into the sides of The Wall Pro structure
    - 1x Martin Audio SX110
- Cinema Surrounds
    - 4x JBL 708P loudspeakers on temporary stands.
    - These loudspeakers connect to Mono XLR-M plates in tiered seating format.
- Yamaha RIO1608-D2 Stage Box providing various audio input/output interfaces to the Dante audio network for event connectivity
- Two FoH floor boxes. Each floor box provides:

- - - 4x XLR-M tieline inputs from the Stage Box, via an XLR Patch panel
  - - 2x XLR-F tieline outputs to the Stage Box, via an XLR Patch panel
- DJ Floor Box (for DJ decks/wired backup):
  - - Stereo (2x XLR-F) input connects directly to the MER

Connectivity of Dante networked audio input/output devices is made achievable at multiple locations for future expansion.

ZeeVee Zyper4K AVoIP System: Content Distribution Network (CDN)

Uncompressed 4K UHD video is distributed over a dedicated 10Gb OS2 single mode fibre LAN with a single core in the MER.

The ZeeVee Zyper4K UHD encoders/decoders are connected at each of the following CDN endpoint locations at store opening:

- ScreenMax LED wall
- Entrance displays
- The Wall Pro
- Various Samsung 4K UHD and 8K TVs throughout the store
- Café digital signage

Additionally, cable infrastructure is installed for future CDN endpoints at:

- 5x '15 Minute Hotel' locations
- 5x 'Sound of London' locations
- 4x VR experience locations
- 7x Hero Area / Samsung signage locations

Green Hippo Servers

There are three Green Hippo Taiga+ servers located in the MER to share files & content on a private 10Gb network (HippoNet) and controlled using the Hippotizer software.

The Green Hippo servers provide professional production quality 4K UHD playback and capability for editing, visual effects, show production & scheduling, capture of video inputs, Samsung experiences, live camera feeds and provides pixel mapping for distribution to the ScreenMax LED wall.

Image credit: Samsung KX

The three units serve the following key purposes:

- Unit 1: Pixel canvas mapping on video content suitable for distribution to the ScreenMax LED Wall via ZeeVee distribution to Samsung SNOW-1703U S-boxes located in the MER.

- Unit 2: Pixel canvas mapping on video content suitable for distribution to the ScreenMax LED wall and The Wall Pro via ZeeVee distribution to Samsung SNOW boxes located in the SER.

- Unit 3: A dedicated server to be used by 3rd parties for events / creation of specialised video content. This unit can also operate as a fail-over for Unit 1.

Video sources will be taken from ZeeVee decoders into 4K UHD capture cards in the Green Hippo Taiga+ units. The video sources include:

- PTZ Cameras
- Graffiti Experience
- Talks & Lectures
- Gaming Events

BrightSign System

The BrightSign system located in the MER enables HDR10+ video content distribution and a platform to upload/change video and static image content for the TVs and signage.

Image credit: Samsung KX

It incorporates 26x XT1144 players located in the MER and routed through the ZeeVee CDN. Audio content from the Brightsign system is routed through the BSS Soundweb to the required loudspeakers in the distributed audio system.

Video Conferencing System

An "all-in-one" AMX Acendo Vibe conferencing system with integrated camera and microphone is located underneath the television in the Staff Training Room.

Control

The AV system utilises three central AMX Netlinx NX Control processors to initiate video and audio processing, routing and equipment control.

- 1: ZeeVee control
- 2: Control of all other equipment
- 3: Redundancy

The AMX processors also provide the interfaces between the AV system and the Martin Lighting production lighting system including façade lighting. A wired 10" touch panel in the Managers Office and mobile tablets provide a user interface to the control system.

A networked remote PTZ controller is provided to control the PTZ cameras in the West side of the store.

"EUROPE'S LARGEST... "

Europe's largest HDR10+ over Fibre Deployment

The brief specified there could be no compromise on uncompressed, real-time video with zero quality loss – mission critical performance for Samsung KX!

Snelling Business Systems leveraged ZeeVee's Zyper4K (SDVoE) 10GB uncompressed product line to deliver HDR10+ content distribution and enabling true uncompressed pixel for pixel 4K 60 444 HDR image quality, with near zero latency (100 microseconds) from any source to any display, including the ScreenMax LED wall.

Snelling Business Systems are the first certified AV over IP Specialist in the UK as part of ZeeVee's new Signal Partner Program, which gave them access to training and resources crucial to facilitate this milestone implementation in the experiential retail space.

Snelling Business Systems have flawlessly delivered an impressive installation leveraging the whole set of ZeeVee Zyper4K 's rich features, flexibility to scale to any unique resolution, ultra-fast switching across a 10GB fibre network, and future-proofing to support the expansion of 100+ endpoints at any time in the future.

Truly commendable installation!

Charlie Sullivan
UK & Ireland Business Development Manager
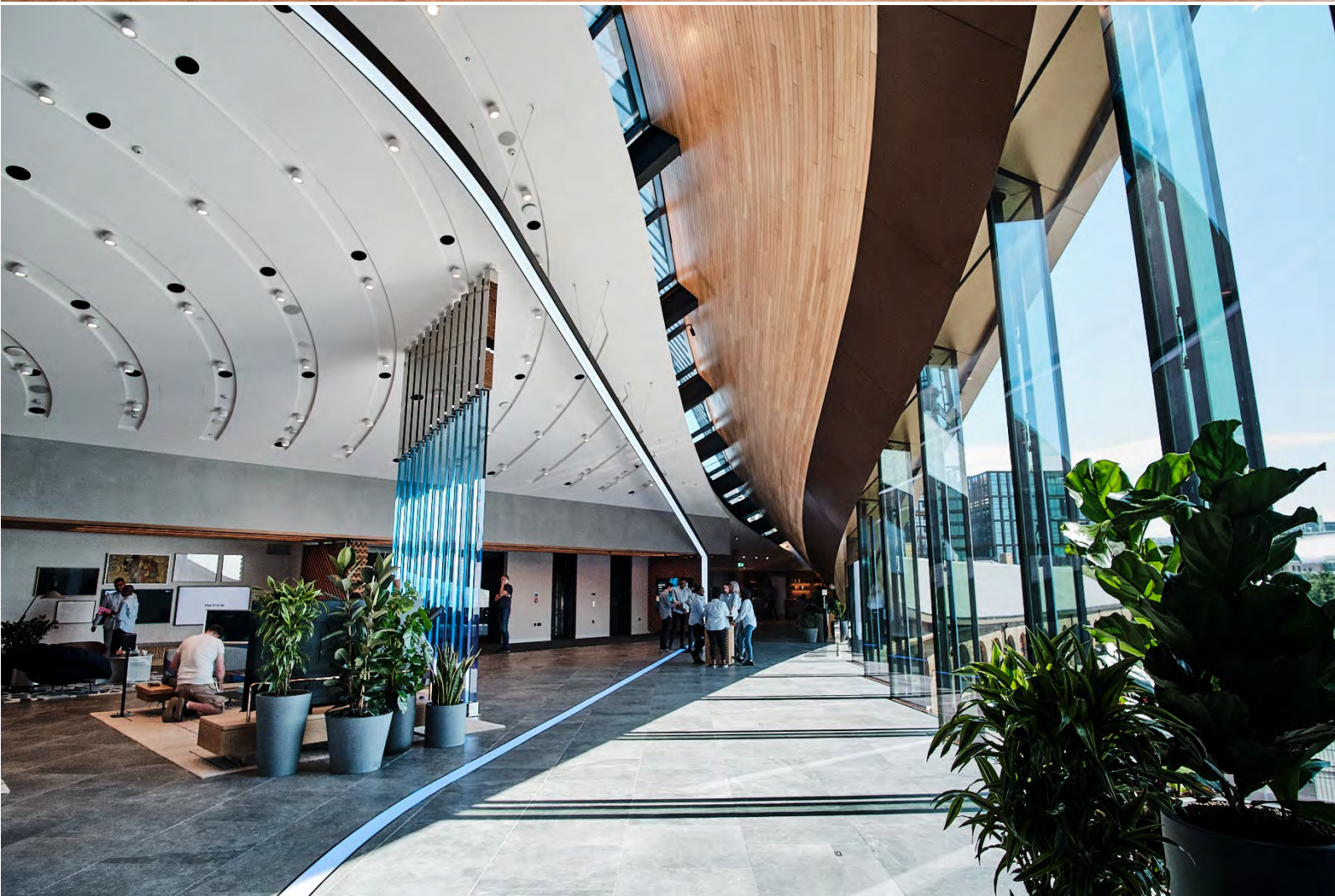ZeeVee, Inc.

Snelling
Business Systems

Image credit: Samsung KX

ABOUT US

In plain speak, we are an international supplier of integrated audio-visual systems, environments, and communications technology. We design, integrate, install and maintain robust AV systems and environments.

But 'how' we do it isn't quite so plain.

Our roots go back to 1954 when Roy Snelling started his business selling and servicing Television and Radio sets in the early days of commercial broadcasts.

As more and more Television and Radio sets found a place in living rooms, Roy witnessed a major transformation – an entirely new medium for people to interact, engage and consume information. The same purpose for which we continue to design and build Audio Visual systems and environments.

We have come a long way.

"Snellings" quickly grew into a household name with Roy's steadfast commitment to an unmatched retail experience – 'customer first' – from the moment they walk in the door to a lifelong relationship.

As we grew and evolved, we nurtured this belief in our internal culture – "customer first", as well as our design/engineering philosophy – "Audio Visual Excellence. Operational Simplicity".

Spot an opportunity. Respond to Change.

Technology will evolve. New platforms will emerge, and your needs will transform. Our culture allows us the flexibility to adapt and respond – to keep pace with transformation and change in our industry; to ensure our advice always keeps you ahead of the curve, and your competition.

We deliver all aspects of audio visual integration from design to the supply, installation and on-going maintenance - all backed by a service ethic, which continues to carry the Snelling signature of quality. Based in London and Norwich, we have maintained our portfolio of major clients and diverse projects across corporate, higher education, public sector, defence and aerospace, retail, medical and healthcare, leisure and hospitality, museums and attractions, and niche specifications.

SNELLING BUSINESS SYSTEMS

Unit 23 Chestnut Drive
Wymondham Business Park
NR18 9SB
United Kingdom
T: +44 (0)1603 711111
E: info@snellingbiz.com

snellingbiz.com
snellingcollaboration.com