



H A R P

VISUAL COMMUNICATION SOLUTIONS



If you would like Harp Visual Communications Solutions to help you deliver your audio visual solution, please call us on 01329 844005 and ask for our new business manager. We look forward to showing you the bigger picture.

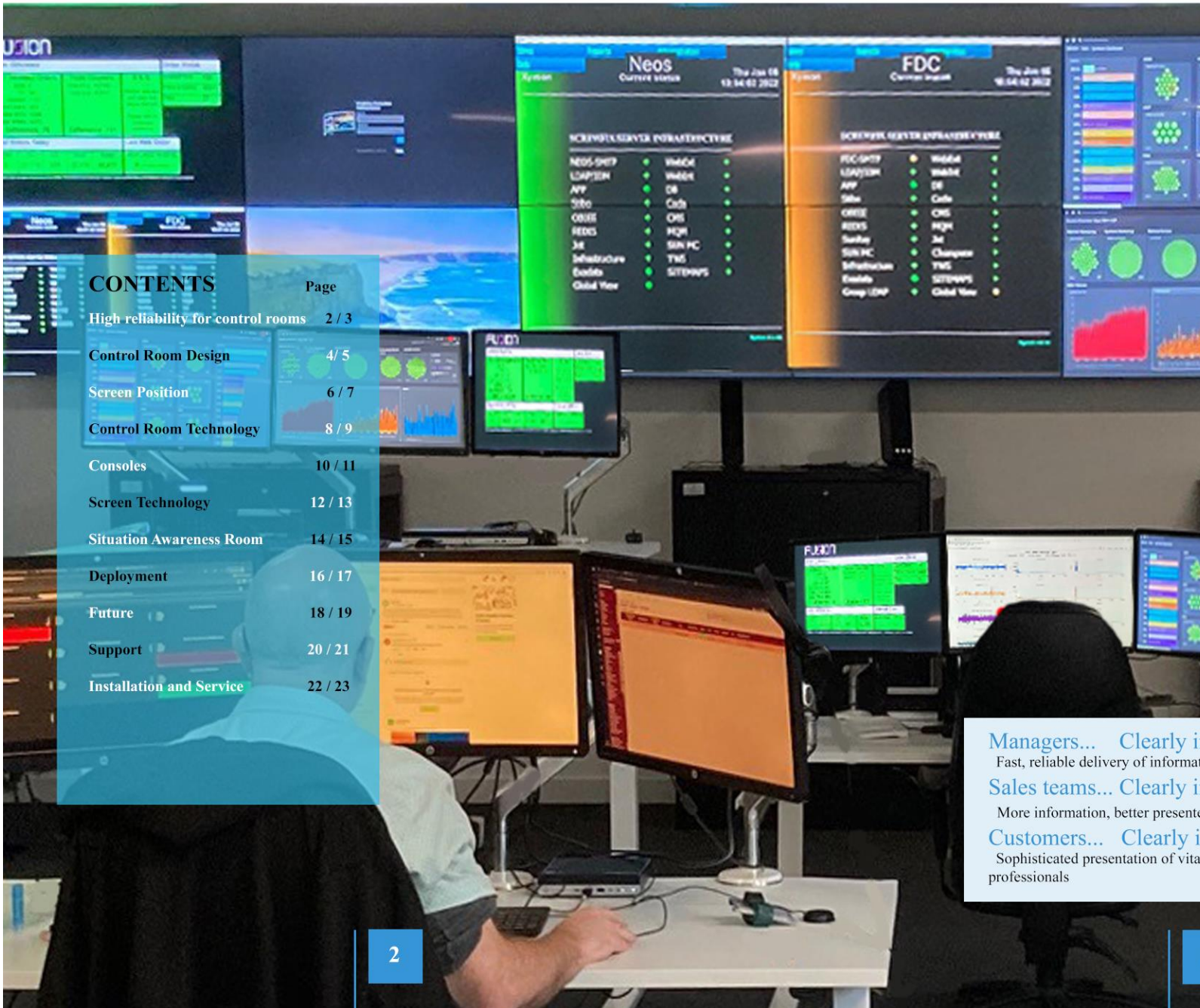
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Control Room Essentials

Concept to Completion



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In a control room environment, being seen to have complete control is as important as having that control - to keep customer confidence running high, and operations smooth.

Harp is a UK-based engineering company which has spent years developing both the expertise and supporting products needed to design effective control room and multi-screen solutions. Solutions which integrate with each customer's particular processes, operating systems and people to put them clearly and visibly-in control.

Unlike manufacturers who rely on and sell only their own solutions Harp is able to select the most appropriate systems and tools on the market and integrate them with its own drive electronics. These proprietary tools allow the working systems to be adapted and tailored to the way you wish to work now, while being open to future changes.

It is this combination of technological expertise and total management ability that has made Harp Visual Communication Solutions one of the largest installers of control room solutions in the UK.

Managers... Clearly in control

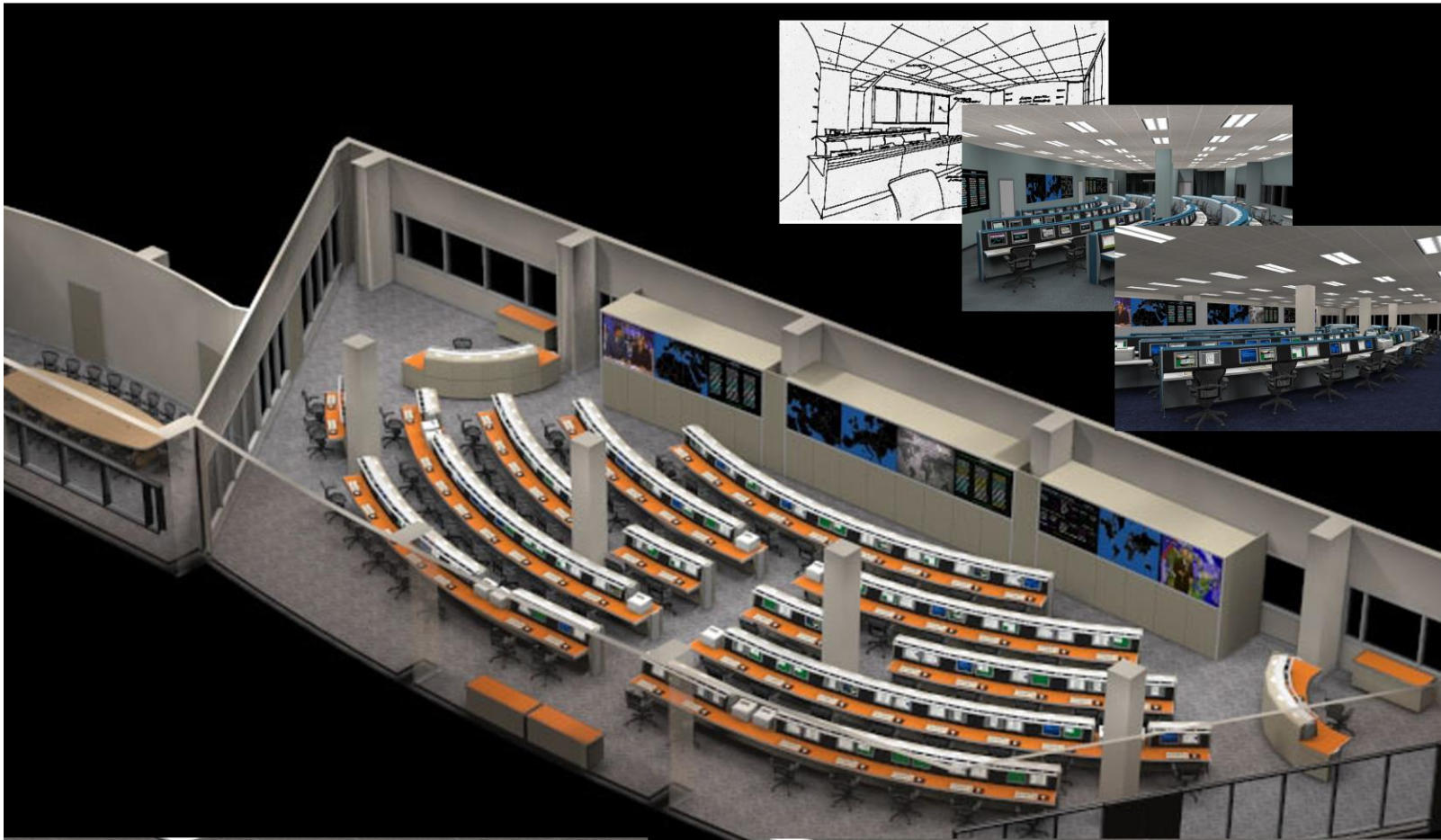
Fast, reliable delivery of information to facilitate decision making process

Sales teams... Clearly in control

More information, better presented, shows customers you have every angle covered

Customers... Clearly in control

Sophisticated presentation of vital information assures customers they are being dealt with by professionals



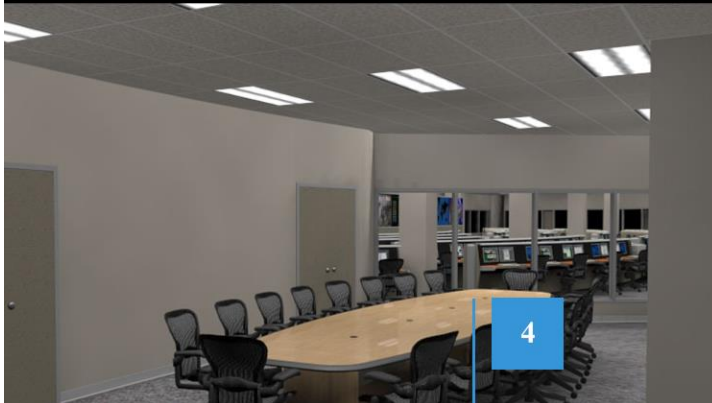
Initially, Harp will set out to understand what the needs of the control room are. It will conduct an assessment taking into account all of the stake holders identifying needs and aspirations. It will start from first principles 'who needs to see what to do their job', physical constraints of the building and what technology is deployed to control the core process.

This information will start to dictate the design of the control room so that information can be easily relayed and controlled by the operators so that decisions can be made quickly knowing all of the facts. Key is the interaction of the operators with one another so that knowledge can be transferred between different working groups who may have different responsibilities.

These findings will be presented in the form of a workshop so that initial assessment can be verified.

To keep the staff at the top of their game ergonomics must be considered and implemented so that they remain alert and effective. Thus, position of the operations in terms of physical position, environment and displayed information are key.

The design will culminate in a proposal showing how the control room will be deployed including a 3D rendering and fly-throughs so that the client can fully understand the strategy.

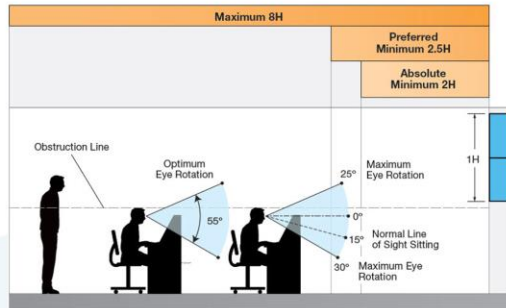


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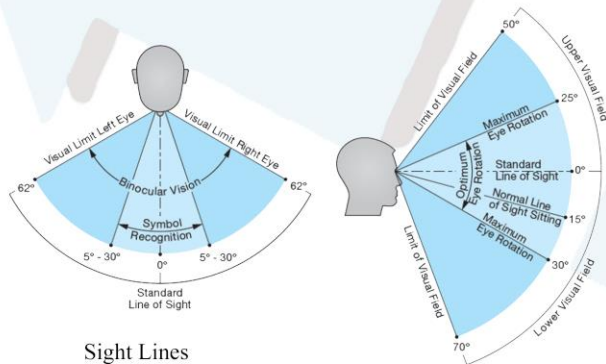


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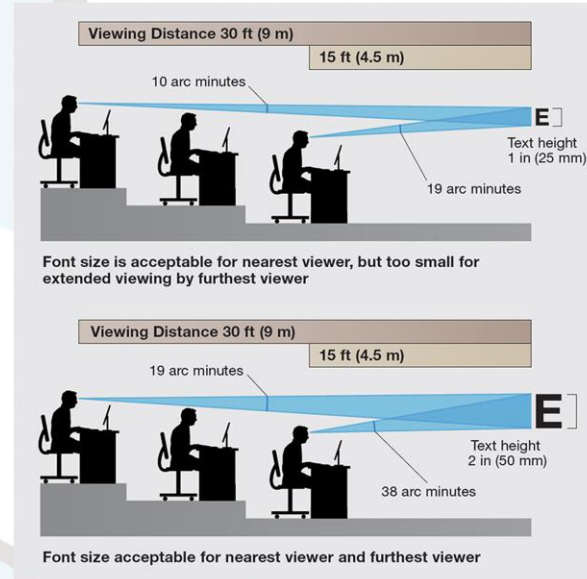
Human Ergonomics



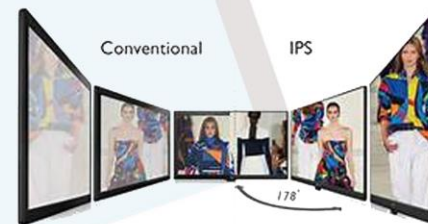
Human Limitations



Sight Lines



Viewing Distance



Viewing Angle of Screens

Environmental Considerations and Human Factors for Videowall Design

The ability to present clear, high quality imagery from multiple sources and at large sizes makes videowalls valuable for maintaining situational awareness, as mission-critical information is presented in a working environment such as a control center.

Viewing Locations

It is essential that all the intended users can easily view the videowall. When evaluating horizontal and vertical viewing angles, the following questions should be answered:

Where are the primary viewers situated relative to the videowall?

Are there any secondary viewing locations for individuals not directly engaged with the display?

In large rooms, such as a control center, viewing locations will vary greatly. It is important to evaluate viewing angles in both the vertical and horizontal planes. If physical barriers are identified, additional displays may be required to expand the videowall, or extra localized displays may be necessary.

Some environments may require that the videowall be split into smaller systems to sufficiently cover all viewing areas. In other cases, adding curvature to the videowall layout will improve viewing coverage,

Clearly in control

Mura IPX Video Processor

DELIVERING COMPACT POWER TO THE DISPLAY

Turn your display wall into one giant workstation, with a clear view through many more monitors displaying their own video streams with consistent response across the entire display wall. This is a clear advantage of all ranges in a 4K range giving perfect resolution of images.

With the Mura IPX video wall processor every user can see all 240 separate screen sources at once – increasing the number of channels available to the display wall. The amount of content that can be displayed is limited by the amount of content that can be processed by the processor. This means that the amount of content that can be displayed is limited by the amount of content that can be processed by the processor. This means that the amount of content that can be displayed is limited by the amount of content that can be processed by the processor.

The Mura IPX processor is a Windows 2D software solution, and incorporates a sophisticated control interface which allows operators to be able to manage the system in a way that is intuitive and easy to use. All system settings are controlled by the Mura IPX processor and can be managed from a central control console. The processor is also able to be managed via a web browser and can be managed via a central console or PC over the LAN.

Some Windows applications can be run directly on the Mura IPX. For universal operation, PC and Linux versions can be supplied. All other live streams are processed directly on the Mura IPX processor and can be managed from a central control console. The processor is also able to be managed via a web browser and can be managed via a central console or PC over the LAN.

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HARP IPX Encoder

Broadcasting 4K IP Video Streams

The HARP IPX encoder delivers industry leading 4K H.264 and H.265 (HEVC) multi-channel video streams, and allows direct access to all 240 channels of the world's most common video, this plug-and-play solution fits seamlessly into existing infrastructure and integrates with any device on the network, ensuring high-quality control distribution and system stability.

With auto-tuning, auto-routing, processing, and recording on all channels, the Encoder allows for transmission of live or recorded content to and from multiple video-on-demand platforms. The H.264 universal encoder lets you stream to multiple destinations at the same time, to different quality and content network bandwidths, compression, open or not, live or from storage. Customisable settings on each independent channel provide powerful routing and processing to ensure only precise graphics and video are encoded.

Features

- H.264/HEVC-Part 10 Encoding
- 4 x HDMI Inputs
- 4 x SDI to H.264/HEVC-Part 10 Custom
- Up to 64 x 4 Channels sub-Ranging
- 5000s-120Mbps Bitrate Range

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Harp Commandant

COMPRESSIONLESS REMOTE CONTROL FOR VIDEO WALLS

Controlling which applications are launched, when, and how they are presented on the display wall gives operators control, but never the responsibility of the system.

The Harp Commandant is a parallel track, post interface to a video wall, which allows a user to control the applications on display, to be launched and running applications, and to be stopped, paused, and resumed in a single application. It is a powerful tool for managing the content of the display wall, and allows a user to control the content of the display wall, and allows a user to control the content of the display wall.

The combination of possibilities that includes the presence of the display wall.

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HDMI Data Blocker

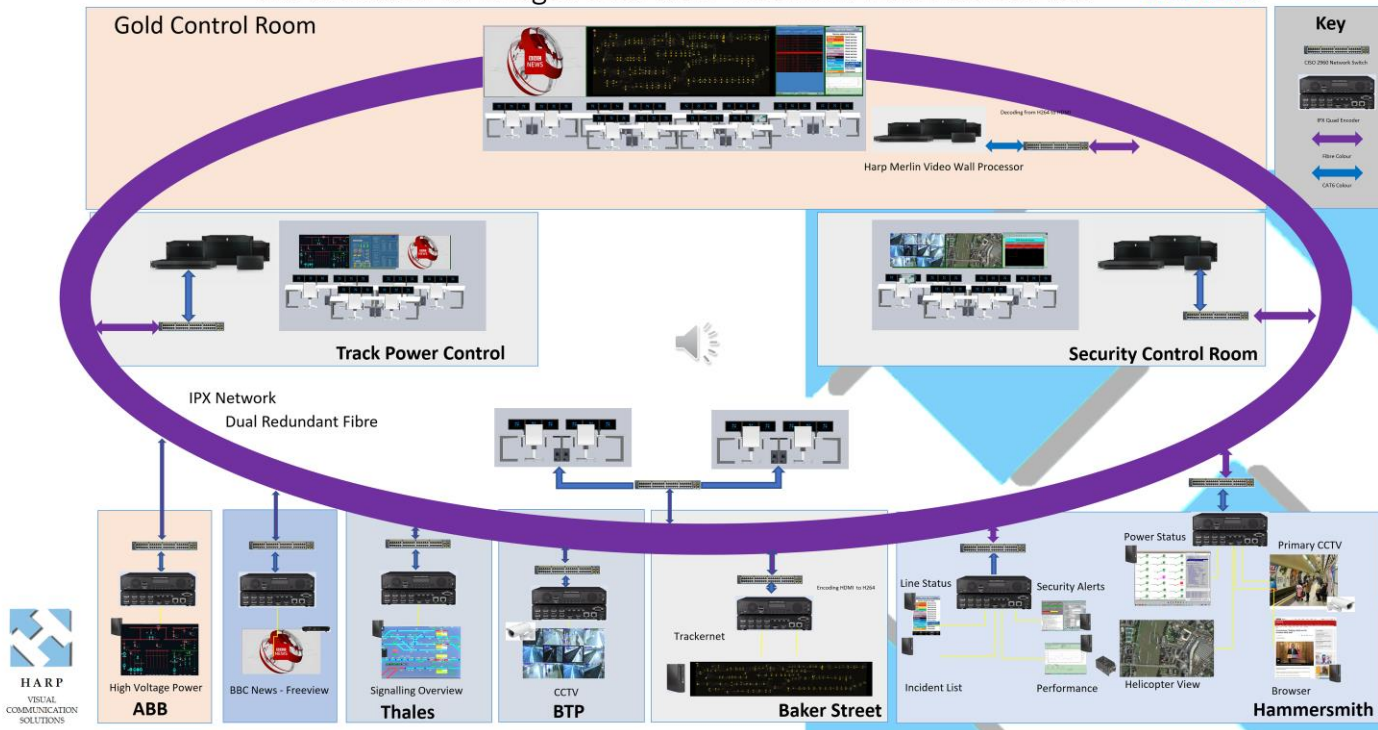
Allows different classifications to be treated and shown on the same screen

The HDMI Data Blocker is designed to be used in the control room. It is a powerful tool for managing the content of the display wall, and allows a user to control the content of the display wall, and allows a user to control the content of the display wall.

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Transmission of Images over an IP Network from remote site – Incident



Key to the efficiency of the control room is firstly the ease to understand the situation of your network or process. Second is the ease of use. How can you manage the systems with information feeds from many different sources and platforms?

Parallel information

- Video Wall – Full situation awareness
- KVM – Direct Access control to all sources
- Security – Crossing of information feeds

Keeping these operation centres at peak efficiency you need to have operators ‘on the ball’ at all times of the day. Features that will enhance awareness off the system are often subtle.

Awareness

- Alarm – Audio / Visual
- Lighting – Correct colour temperature – Circadian Cycle
- Air Conditioning – Central and local
- Consoles – Sit stand ability

The solution lets you decouple your software from your hardware so you can change applications as your needs change. Nothing stands in the way of the growth of your organisation.

Remote Working Site Mirroring

Once the sources have been digitised and available on the IP network these can be accessed anywhere in world given the correct privileges and secure access.

Ergonomic Design



Clean and Clear Desktop



All cables are hidden



Sit or Stand



Hidden Power distribution



Accessories

Advanced ergonomic design complements the style and durability of the open concept Strategy Air™. Designed for 24/7 lifetime use, Strategy Air Sit-Stand combines the latest in operator comfort and ergonomics with superior cable management and technology integration.

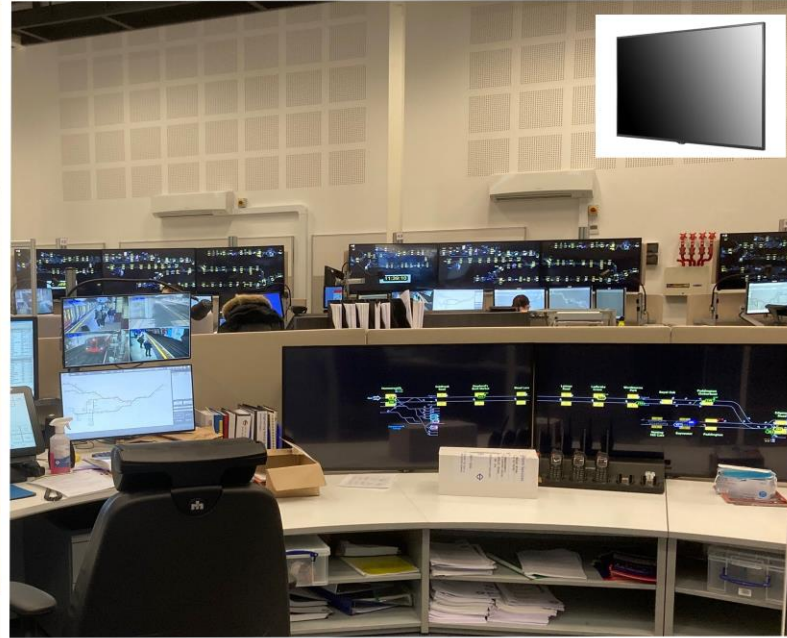
Strategy Air Sit-Stand is a fully scalable control room solution that leverages remote server technology. The innovative cable management system allows the console and the operator to be free from IT infrastructure and unsightly cables whilst offering long-term durability, functionality and a modern look and feel.

Strategy Air Sit-Stand has been ergonomically designed to enhance the health and productivity of operators, giving flexibility to interact with their immediate environment. The Strategy Air Sit-Stand allows the operator to move from a seated to standing position easily and quickly.

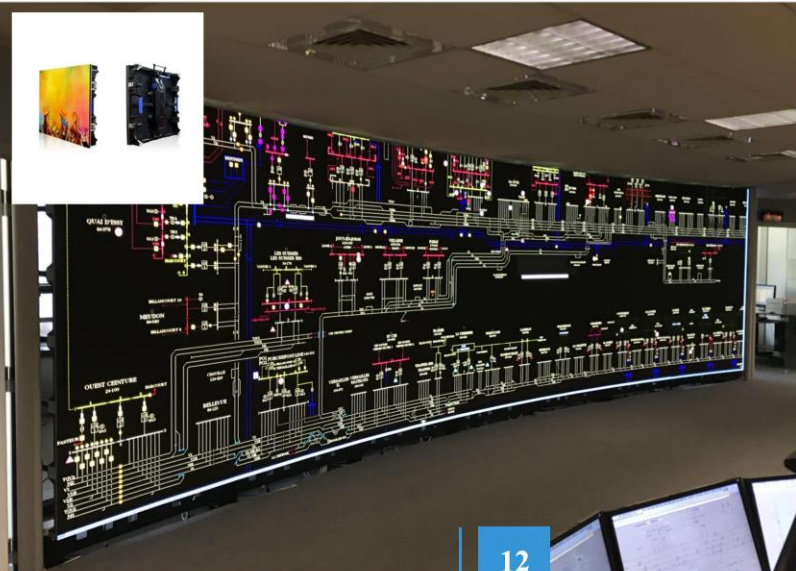
Its added mobility contributes greatly to the comfort and well-being of the operator reducing downtime and creating a more effective work environment.



Video Wall LCD Thin Bezels



4K LCD Thick Bezels



Video Wall LED No Bezels

12



4K Bird Table

13

Choice of displays is key to the transfer of knowledge showing the overall picture of an operation and providing immediate information that is up to date and time critical. Following on from who needs to see what to do their job' the next limitation is the human eye. If the operator cannot read the information from their desk then it is useless. Thus, true ergonomics come into play of selecting the right display.

You need to consider

- What information needs to be shown.
- Who needs to read it.
- What detail needs to be readable.

To what detail does the operator need to see. How many vehicles are there, is it a car or lorry, recognition of what make of car, or down to the registration number?

Once the human factors have been considered then the **right display that best meets those needs can be selected.**

LED. Limited to resolution, viewable over long distances, long life.

LCD Video Wall. High resolution (Full HD per screen), realistic colours, cost effective

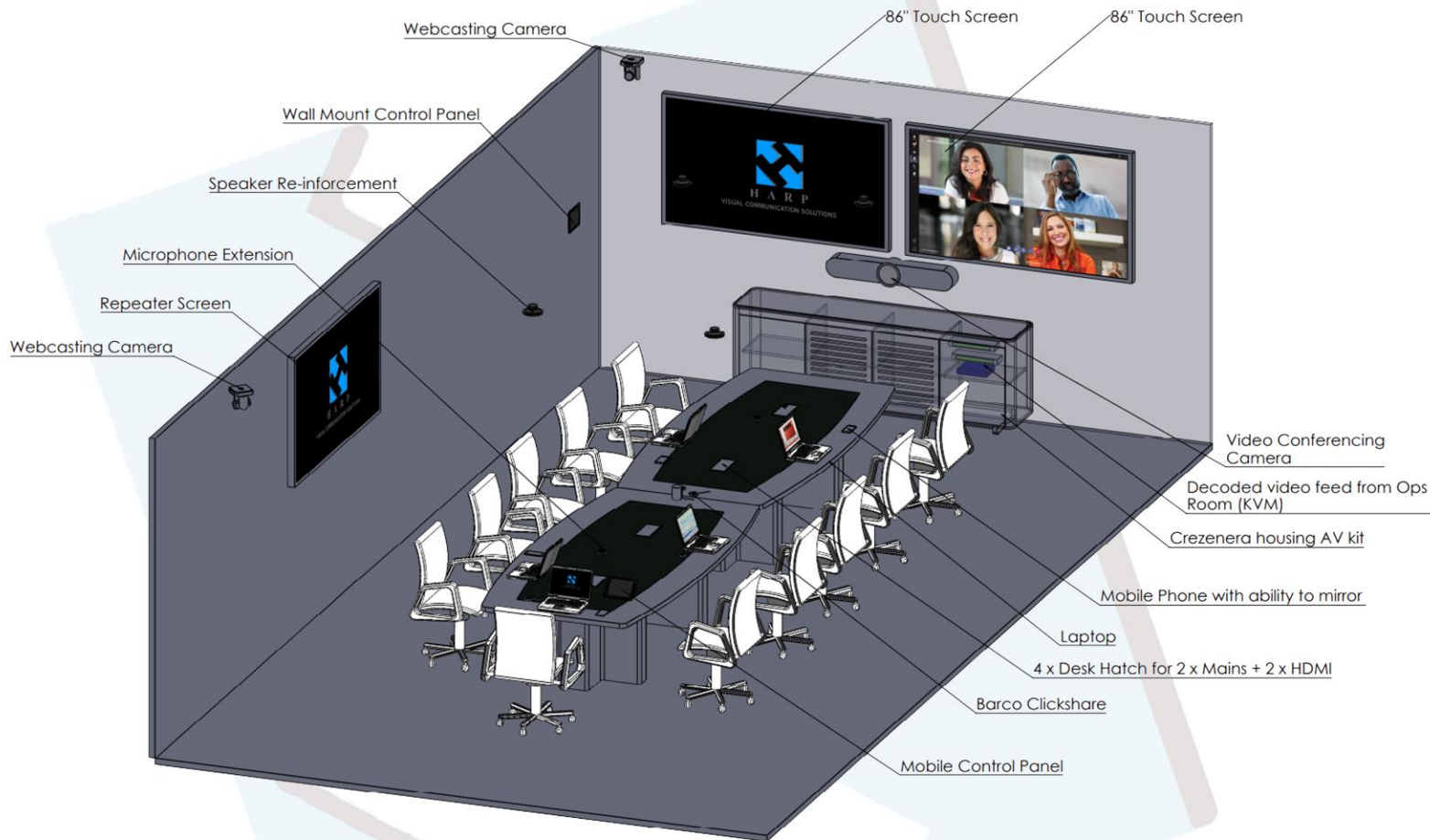
LCD Desk Monitor Wall. Ultra high resolution (4K per screen), large bezels

Rear Projection. Minimal bezel width, low brightness, large space needed to house.

Bird Table. Group working, Touch.

Images: Top Left LCD Video Wall (Highways Agency), Top Right LCD Desk Monitor (LUL) Bottom Left LED (SNCF), Bird Table (Ordnance Survey)

Situation Awareness Room



Decision Making

The audiovisual systems required for Situation Awareness Rooms, are often the most advanced multimedia solutions that a company or organisation will invest in, since it is often these rooms are where the most important decisions are made.

In addition, room aesthetics are very important, and the technology must integrate seamlessly into the rooms architecture and furniture to take account of the; image, nature and grandeur of the space. Harp can provide AutoCAD layouts as part of our service to assist in this process.

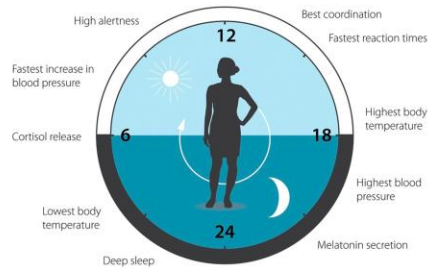
Such rooms will almost certainly require videoconferencing and audio conferencing, but increasingly HD (High Definition) Videoconferencing is being adopted. Audio performance is vital where long meetings are held with important decision making, therefore we design audio solutions from small rooms to the largest possible SAR room allowing all participants to hear with complete clarity.

Busy professionals do not want to spend time learning how advanced audiovisual systems operate; therefore all SAR solutions Harp designs have an intuitive control system allowing the technology to be used easily, reliably and to its best advantage.

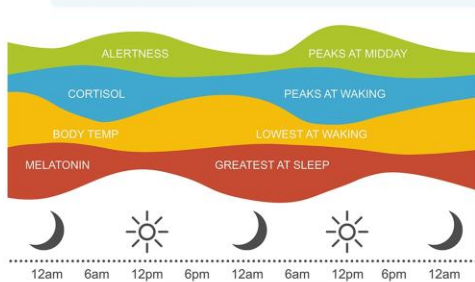
Information feeds can be taken directly from the operations video wall video network and displayed in real time within the SAR.



Lighting



Circadian Rhythm



Circadian Alertness



Effective Lighting to enhance Productivity

Cable Management



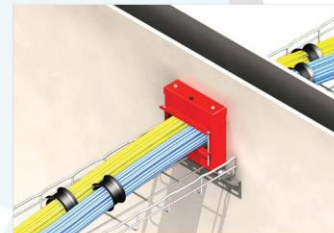
Designed basket tray



Separation of network types



Neat Rack Wiring



Fire Stopping

Lighting - Keeping Operation staff alert

The intent of circadian lighting design is to work in harmony with our internal clocks by providing ample access to daylight or, when daylight is unavailable, modulating the intensity, spectrum, and color of electric light in symbiosis with the natural lighting cycle. This harmony should amplify occupant comfort and productivity and create a healthier visual environment and experience.

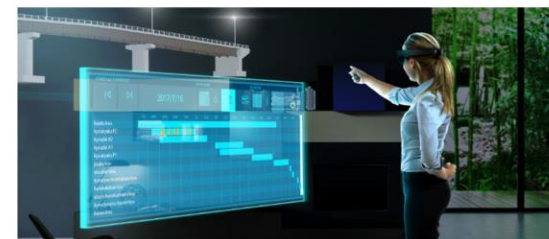
It is important to note that the wavelengths that impact our biological rhythm can be modified without shifting the visual appearance of the light color. We believe there is also a psychological benefit, even on a subconscious level, to shifting the color temperature because it reinforces a connection to the outdoors. Room environment, being seen to have complete control is as important as having control – to keep customer confidence running high, and operations smooth.

Cable Management

Proper cable management is not an option. It is a must. It is mission-critical. To ensure that cabling infrastructure meet your control room needs, follow these best practices:

ANSI/TIA-942-B-2017 Telecommunications Infrastructure Standard for Data Centers

BICSI 002-2019 Data Center Design



Mixed Reality is a blend of physical and digital worlds, unlocking the links between human, computer, and environment interaction. This new reality is based on advancements in computer vision, graphical processing power, display technology, and input systems. These Mixed Reality solutions deliver has gone beyond displays to include:

- Environmental input
- Spatial sound
- Positioning in both real and virtual spaces

Technological advancement enables Mixed Reality experiences, but there aren't any devices today that can run experiences across the entire spectrum. Windows 10 provides a common Mixed Reality platform for both device manufacturers and developers. Devices today can support a specific range within the Mixed Reality spectrum, with new devices expanding that range. In the future, holographic devices will be immersive, and immersive devices will be more holographic.

Harp can offer solutions from basic starter systems through to full blown implementation packages to whether you are considering the concept or engaged into the development and implementation.





With so many mission critical audio visual systems in the Harp installed base, the company is charged with not only making sure that all screens are functioning correctly and are colour balanced etc, but also ensuring that the correct content is being delivered and displayed to the correct screen at the correct time.

Client content is delivered and scheduled online on a common timeline basis, using a unique delivery system pioneered and unique to Harp.

By having such a sophisticated and reliable schedule monitoring system, it is possible to produce all the relevant statistics needed to demonstrate to the client the playout times, downtime etc. of each screen and the campaign it relates to.

Key features

Support 24/7 365 days a year

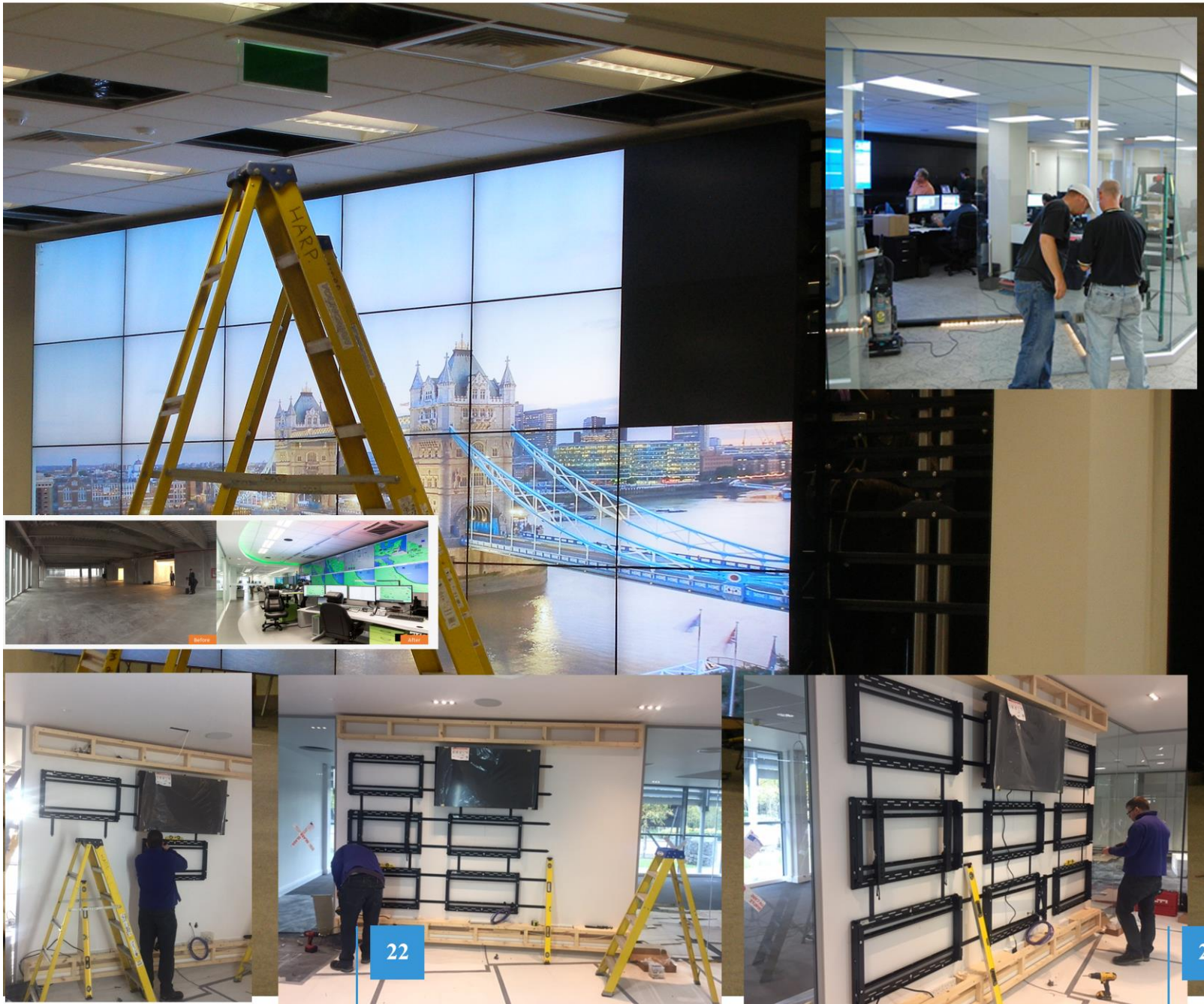
Full coverage from engineering sites at:-

- Southampton
- Preston
- Edinburgh

Full spares holding

SC approved Engineers

Client view screens.



Harp offers an installation and maintenance service for all of its products, ensuring that each is fitted and commissioned in the most efficient and effective manner. All of Harp's installation engineers have safety passports and are well versed in construction site rules and procedures.

Harp will totally project manage complex installations, providing relevant expertise in the shape of structural, electrical and data installation engineers where needed.

Safety is paramount on these projects as most are public facing and often in areas to which the public have access during the installation. A project manager conducts a full site survey and generates risk assessments and method statements before any work commences.



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