CASE STUDY: ARUP BOSTON

How standardization of visual collaboration in large project teams saves time and money

Engineering is a complex process and Arup, the global consulting firm, needed a way to bring their resources together. They wanted to use digital tools and drawings in their collaboration sessions to improve decision-making and discussions around complex construction challenges.

Image: The multipurpose room in the Boston offices of Arup with its blended projection solution creates the perfect seamless canvas for collaboration and BIM applications.

Arup's mission is to help clients solve large, complex construction challenges by harnessing its diverse skills to constantly expand what is technically possible. Arup operates in an industry that is changing fast. Innovative, advanced design and construction techniques that only a few years ago were not even envisioned are now routinely deployed.

As with most industries, increasing digitalisation enables new ways of working, and Arup has embraced the latest technologies with enthusiasm. The company has an ongoing need to demonstrate to its clients how their concepts and designs will look, which includes viewing plans and graphics in considerable detail. Close liaison is essential, not just with clients but also between Arup's many employees whose skills encompass a range of complementary disciplines. Effective collaboration allows the expertise of each member of Arup's multidisciplinary project teams to be combined for better decision-making. Such collaboration is often best done on large displays, using sophisticated AV technology. This facilitates the creation of optimal design and construction plans, so the company can meet - and exceed – client expectations.

About Arup

Arup is an independent firm of designers, planners, engineers, consultants and technical specialists, working across every aspect of the built environment. Today, Arup employs more than 14,000 people, in more than 34 countries and offers a wide portfolio of products and services. Many of the world's most iconic sports stadia are Arup projects – such as the Sydney Opera House, Beijing's Water Cube, the Singapore Sports Hub and the London Aquatics Centre. Arup is also trusted to develop vital new infrastructure, such as the Second Avenue Subway in New York and the Queensferry Bridge Crossing.

Learn more at www.arup.com

> *The role of the global IT function at Arup is to drive standardization. We strive to build AV solutions based on IT principles that we can support globally through remote support and configuration. The benefits are substantial and the total cost of ownership significantly lower as we are able to streamline everything from configuration and user interface to support and monitoring.*
>
> - **Roy Salfarlie**, VC Specialist at Arup Global IT

The challenge: enabling interactive visual collaboration for large multidisciplinary teams

Arup frequently employs large project teams which often include participants – both clients and Arup staff - from across the globe. These require large meeting room spaces and displays in order to collaborate effectively. Arup has around 400 video-enabled meeting rooms across its various offices and understands how vital it is to effectively connect their disparate employees and clients.

The extensive requirements for successful team collaboration, as well as for productive client engagement, meant Arup had difficulty finding the right solutions to suit varying needs. This was particularly true for the larger spaces that are more complex to design from a collaboration perspective. Several bespoke solutions were considered; however, most were expensive and not easily scalable to the size of room and specific meeting requirements. Arup was looking for something that the company could replicate across its offices, whilst being easy to manage and support.

Maximizing use of space at Arup

Many of the company's larger meeting spaces are multipurpose and are used for 'town hall' type events. In addition, they can be used for specific meeting, presentation and application-centric needs, such as for Building Information Modelling (BIM). BIM is a process which involves the generation and management of digital representations of physical and functional characteristics of places; and which is increasingly gaining momentum.

User requirements driving choice of solution

While Arup's small and medium size rooms were working well, a staff satisfaction survey highlighted users were becoming frustrated with the lack of ability to hold larger meetings and presentations involving many people.

An assessment of the requirements for large meeting spaces revealed the need to showcase projects successfully to clients, as well as enable inter-company collaboration on a large scale. This included the use of sophisticated software applications and allowing extensive and detailed sharing of data, to facilitate the complex decision-making to drive projects forward.

The solution: driving standardization to improve productivity

Large, collaborative meetings typically have complex requirements. These can be architectural, such as the need for divisible rooms, appropriate ceiling height, lighting and acoustic considerations, in addition to both aesthetics and technical functionality.

Like many organizations, Arup recognized that standardizing on technology across offices makes collaboration easier and saves time and money. This being particularly true when it came to support. Indeed, using a range of different solutions meant that users were having to spend time learning how to operate each particular room before each meeting. This was slowing down the collaboration process and impacting meeting efficiency. Standardization was a particularly attractive goal because it would allow ease of use by providing a consistent user experience and centralized IT support. To address such needs, Arup's global IT team engaged with Cyviz who offered global turnkey solutions for multipurpose collaboration spaces. Together with a control and management system managed through a centralized server, and a standardized intuitive user interface, the solution delivered according to Arup's most important needs.

Image: **The standardized turnkey solution Cyviz proposed for Arup's Boston office consisted of three projectors, blended to create one large seamless image.**

> *We wanted a company with extensive experience and industry know-how to help us create the next generation of collaboration spaces to meet the needs of our digital workforce. The Cyviz solution has overcome the challenges of large-scale presentations to both internal and external audiences. The clarity of resolution, and the ability to split screens using multiple projectors has revolutionised our work and will make it easier to demonstrate our plans to clients and to collaborate internally.*
>
> **- Roy Salfarlie**, VC Specialist at Arup Global IT

Embracing industry innovation at Arup's Boston office

Arup is a leader in the use of the latest, most sophisticated technologies in order to deliver the complex and innovative engineering projects required by its clients. The company uses state-of-the-art BIM applications which are best viewed in a large format using several sources of content where users can drill down and consider multiple perspectives simultaneously. This includes the need to display high-quality images in interactive collaboration sessions between Arup teams and clients.

The existing solutions within Arup's Boston office could not appropriately meet such needs. As a result, Arup began to evaluate its options to upgrade the facilities. However, attempts to scope a solution addressing most of the basic needs proved difficult for a variety of reasons. This included the ability to provide a large enough, seamless display with full in-room viewing capability and sufficient resolution. Cyviz demonstrated its capabilities to scale content dynamically to ensure visibility for all meeting participants in the room, which was exactly what Arup needed. The standardized turnkey solution Cyviz proposed for Arup's Boston office consisted of three projectors, blended to create one large seamless image.

The Cyviz technology allows several content sources from various feeds to be displayed on a screen at the same time, together with video-conferencing. For example, during a collaboration session, a project drawing can be displayed in one single pane, a timeline for the project in another and information about the contractors in another. A user can move easily from one window to the next, stretching the image and zooming in at the touch of a button without having to manage different feeds. The set up renders itself perfectly for multidisciplinary teams with participants from different departments and bringing their specific views to the table. Arup particularly liked the fact that Cyviz offered complementary yet standardized technology to other systems already deployed elsewhere and was able to provide a consistent user experience.

This has the advantage that users did not have to waste time learning how to configure the system each time they used it. It also allowed Arup clients to connect seamlessly from whatever technology they wanted to use. In addition, the system can be fully supported by Arup without having to use external third parties. All this, and the fact that Cyviz provides sophisticated yet easy-to-use technology that works straight out-of-the box, helped make the decision to adopt Cyviz for Arup's Boston office very straightforward.

User experience

- Project meetings are more efficient, and the speed and accuracy of decision-making improved through the visualization and collaboration capabilities.
- The BIM team and others can interact more effectively with clients over projects using high quality resolution images, video and audio.
- The multipurpose functionality where the room can be divided as needed allows maximum utilization of the room.
- The user feedback feature means that problems can quickly be resolved, and the performance of the room optimized at all times.
- Users can connect their laptop through multiple options to share data immediately, saving time and reducing frustration.
- An intuitive user interface means less time spent on learning how the system works.

Installation and design

- The standardized design based on proven design principles and pre-selected and tested components reduce time to scope projects and install significantly.
- The installation process is also impacted through the deployment with server configuration that can be done remotely by designated experts.

Service and maintenance

- The standardized system enables effective remote monitoring and management, which helps anticipate any maintenance required.
- The remote support capability lowers the operating cost and resources required.
- System and software upgrades with new functionality can be deployed through the central server.
- The ability to integrate with existing infrastructure makes it possible to capitalize on existing IT and AV investments.
- With no software programming required, the total cost of ownership is significantly reduced.

Users delighted with results

The Cyviz solution is now up and running and working effectively in Arup's Boston office. Users are delighted with the ease of use and high-quality, flexible visual experience, especially the ability to view multiple images simultaneously. As the graphical user interface remains the same for each office, changes can be made to accommodate the specific requirements of each meeting, while still providing a 'plug and play' consistent user experience. The economies of scale the system provides reduces overall costs, and because only a simple software update rather than reprogramming is needed, the total cost of ownership is much lower. Based on the Cyviz solution architecture, Arup internal IT is also able manage a larger part of the support themselves, providing further savings.

The results have been outstanding. Users cite ease of use including simple operation of the rooms, clear join button to initiate meetings and the consistency of the user experience, as well as the ability to see multiple content sources simultaneously as the main benefits.

Environmentally friendly

Superior video and audio quality means travelling to customer sites or between offices is much reduced, saving time and money as well as reducing Arup's carbon footprint.

The future

Arup is committed to further improving the user experience through technology and will continue to investigate the use of new technology such as artificial intelligence, augmented and virtual reality to enhance their projects and the collaboration processes.

The process of standardization will serve to further future-proof their systems. The centralized control and monitoring, along with the remote management of the systems and meeting spaces are essential to the efficiency of the operation. Arup is now looking at rolling out Cyviz solutions throughout their offices globally.

System specification

- Cyviz Easy Server integration
- Cyviz Easy Controller
- Wireless content sharing
- 3 x Cyviz WUXGA edge blended projectors (overall resolution 5280x1200)
- 6m wide projection screen
- Readiness for future video conferencing endpoint integration
- Cyviz xpo4.8 video processor for image processing and scaling
- 4 x simultaneous real-time source display capability
- Audio system with DSP and amplification

About Cyviz

Cyviz is a global technology provider for visual collaboration, meeting rooms, visualization, and operations centers. Since 1998, Cyviz empowers the digital workforce, organizations and employees to connect, visualize, and collaborate on their critical data. Cyviz provides turnkey solutions that are easy to deploy, easy to operate, and easy to support. Today, Cyviz serves the Fortune 500, global enterprise and government customers that demand seamless integration of leading-edge technologies that engage people, encourage greater collaboration, and accelerate decision-making. Find out more on www.cyviz.com or visit one of our Cyviz Experience Centers in Atlanta, Dubai, Jakarta, Houston, London, Oslo, Riyadh, Singapore, Stavanger, or Washington DC.