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COMMUNITY SERVICE

Electronics & Engineering won the Leisure & Entertainment Project category at the Inavate APAC Awards 2022 with the One Punggol project. Discover the installation in detail.

Creating a sense of community is a difficult task and one that requires careful thought as well as a nurturing approach. A major part of community building is creating spaces that the community can call their own. One Punggol is an integrated lifestyle hub which serves community needs, especially for the Punggol residents.

Led by People's Association, One Punggol is a community-focused development that encourages and strengthens meaningful engagement, to create an enriched and multi-sensory experience for residents and visitors. With eight Co-Location Partners under one roof, providing community, cultural, civic and lifestyle facilities, One Punggol champions a refreshing model of integration, not only for greater spatial efficiency through co-location and co-sharing facilities, but also exciting opportunities for synergistic collaboration, primarily for further enhancing the daily lives of Punggol residents.

One Punggol spans across approximately 45,000 sq m and brings together eight Co-Locations Partners, namely People's Association (PA), Punggol Regional Library (NLB), Hawker Centre (NEA), Early Childhood Development Agency (ECDA) Childcare Centre, Housing Development Board (HDB) Branch Office, Ministry of Health / Kidney Dialysis Centre (KDC), MOH/KKH Department of Child Development (KKH-DCD) and MOH/Health Sciences Authority (HSA) Blood Collection Centre.

DP Architects was the architect, Acviron Acoustics Consultant served as the consultant while Electronics & Engineering [E&E] was the system integrator for the project.

The brief for the team was to iterate the design concept and have it be realised through intuitive programming of spaces and pedestrian flow while drawing inspiration from the site's history. In the early days, Punggol was a village where the 'kampung spirit' – a sense of community and culture of togetherness – pervaded. Today, as a vibrant new town with a young and urbane population, One Punggol had to blend the nostalgic notes of the kampung with its modern vision; bringing people together to the new 'Heart of Punggol' and promoting social cohesion across generations.

One Punggol's facilities also aim to bring convenience to the growing number of three-generation families in Punggol and support a wide range of interests and programmes to serve residents' needs and aspirations, building and fostering stronger bonds among residents, for a more resilient, gracious and participative community. A variety of spaces and facilities can be found throughout the development.

We start with the Celebration Square, which occupies about four football fields' worth of space, and serves as the main event space of One Punggol for residents to gather.

The key focus within the Celebration Square is a Unilumin Kslim3.9 LED videowall measuring 8.5m by 4.5m along with a stage. The videowall has been set up strategically as the focal point to bring people together during community events. A Kramer VS-88H2A processor powers the videowall while Kramer HDMI over Cat6 is used for video signal transmission.

The use of LED display technology especially at the Celebration Square was employed to project incredible versatility and brilliance and is the preeminent visualisation solution for communication to the visitors around One Punggol and this meant that there was a need for immaculate precision of sound and video outputs to deliver unforgettable experiences for visitors at One Punggol.

Audio in the Celebration Square is

handled by JBL Intellivox HP-DS170 speakers together with BSS Blu 100 DSP and Crown CDi 2 600 amplifiers. Shure QLX-D wireless handheld and head worn microphones are provided for audio input and an Allen & Heath Qu-16 mixer is used to combine and adjust the levels of audio signals from various sources.

The community member's journey follows from Celebration Square to ServiceSG @ One Punggol, which is an Integrated Public Service Center. This space allows members of the public to have access to more than 200 government agency services. There is also a self-help Digital Lobby that gives residents an opportunity to get answers face-to-face with public sector officers for more complex queries.

A CLT H261 Plus LED videowall and LG flat panel displays are used at the frontage of ServiceSG @ One Punggol to convey information. Brightsign is employed for digital signage in this space as well.

Another highlight is the One Punggol Community Club's Multipurpose Hall at level 5. The multifunctional space can be used for a host of events ranging from sporting activities to community celebrations. This space has four badminton courts and six hundred retractable seats. It is a versatile space where both sporting competitions and community events can be held, with a pre-event area outside where guests can interact before the start of the program or activity.

The whole space can be customised to suit the programming and event needs of the user. The space is used to support community outreach programs and for creating meaningful engagement with a wide variety of community programs.

Visuals in the Multipurpose Hall are handled by a Panasonic PT-RZ34K projector which displays onto a LAV Pinnacle Megapro projection screen. Video transmission is handled by the Kramer system and a Kramer VS-88H2A matrix switcher.

A Panasonic camera and controller system round out the visual system in the Multipurpose Hall as well to record proceedings.

Audio in the Multipurpose Hall is delivered by JBL Intellivox HP-DS170 speakers together with BSS DSP and Crown amplifiers. Shure microphones and an Allen & Heath QU32 Qu-32 complete the audio system.

A smaller multipurpose room follows the same technology template as the Multipurpose Hall on level 5 with the products being selected in line with the smaller size of the space. JBL Control 28-1 and Control 16C/T speakers are employed for audio output. For visuals, a Panasonic PT-EZ590 projector and a LAV Hariz Model-BN projection screen is deployed while a Kramer VS-84H2 matrix switcher is used as the heart of the video system.

The same attention to detail and requirements is demonstrated at the five-storey Punggol Regional library. A selection of Epson projection together with JBL speakers, in conjunction with the requisite system products, bring audio and video to a maker space, meeting room and program space. The program space also features an Extron DSP for processing.

One Punggol is very large and comprises many differently sized rooms and spaces. Wireless and wired control was needed so that the spaces at One Punggol could be effectively used to their full potential. The control system was designed to fit the design specifications and a GUI was developed to ensure that it would be easy and intuitive. Crestron CP4 processors, Crestron keypads and touch panels as well as Apple iPads are pressed into service for wired and wireless options.

The last technology system of note is a Unilumin Ustorm 10 outdoor LED videowall measuring 6.0m by 3.2m that is used to display various announcements easily viewed by the community.

E&E leveraged AV over IP using Aavara PB9000 encoders and decoders to connect the LED videowall on level 1 and the outdoor LED screen on level 4 to the control room located next to the Multipurpose Hall on level 5. AV over IP was specifically used to navigate the distances involved in establishing this connection.

During the project E&E had to battle disruption and overcome challenges. Kevin Boey, project manager from E&E, details: "The One Punggol project was smack in the middle of the Covid-19 pandemic and due to this, our teams had to navigate work restrictions, manpower challenges and various supply chain issues. Our years of experience and commitment towards delivering for our clients and to their requirements and deadlines meant that despite these unique challenges our team was able to successfully complete the project on time."

Gary Goh, CEO of E&E, concludes: "The user is at the heart of everything we do at E&E and the most interesting aspect of this project was One Punggol's drive to 'bring everyone together'. For this project, we deployed technologies such as AV over IP and wireless control ensuring that the systems are both user friendly and futureproof."

Tech Spec

Audio
Allen & Heath Qu-32, Qu-16 mixers

BSS Blu 100, Blu 50 DSPs

Crown CDi 2 600 amplifiers

Extron DMP128 DSP

JBL Intellivox HP-DS170, Control 16C/T, Control 28-1, Control 2P, AC28 speakers

Shure QLXD2, QLXD 4, handheld, head worn microphones

Video
Aavara PB9000 encoders and decoders

Brightsign HD224 units

CLT H261 Plus LED tiles

Epson EB-800F, EB-PU1007W projectors

Kramer VS-88H2A, VS-84H2, VS-44H2A matrix switchers, transmitters, receivers, VS-1616DN processor

LAV Pinnacle Megapro, Hariz Model-BN projection screens

LG 65TR3BF-B, 65UH5F flat panels

Panasonic PT-RZ34K, PT-EZ590 projectors, AW-HE40S cameras, AW-RP60 camera controllers

Philips 98BDL4150D display

Remaco PLT-416 projector lift, TEN-3220W projection screen

Sony FW-55BZ40H, WD-65BZ40E flat panel displays

Unilumin Kslim3.9 LED, Ustorm 10 LED tiles

Control
Apple iPads

Crestron TSW-1070-B-S touchpanels, CP4 processors, MPC3-302-B-T keypad controller

Control
ETC Source Four 15-30 Fixture, 26 Fixture, 36 Fixture, Fresnel Fixture